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Journal of the Irish Dental Association
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Volume 67 Number 4
August/September 2021

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EDITORIAL

Dr Ciara Scott
Honorary Editor

Protecting the future of dentistry

As this year's new young dentists begin their careers, we recognise the dedication and support that have got them this far, and the need for further recognition of the challenges in the profession, particularly in light of continued under-resourcing of services for patients.

They did it! The members of Team Ireland are on their way home from Tokyo and eight young Irish people are bringing a medal home with them. Qualifying for the Olympic Games is an extraordinary accomplishment in itself and a reflection of talent and many years of focused determination and commitment to training. The gold medal successes in boxing and rowing this year build on previous success in these sports and reflect the learned experience in these fields. They also reflect the investment in the Sport Ireland campus to improve training facilities and resourcing to support the next generation of young athletes to achieve their potential. Success depends on the individual, but also on the infrastructure they train within and their network of support – teammates, coaches, medics, psychologists, fellow competitors, and families and friends. Many athletes have spoken about the challenge of competing in Tokyo without spectators or their families being there to support them during competition, to share their disappointment or celebrate their success. The media have shared interviews with parents and families who have anxiously watched events remotely, passionately caring about the outcome. Athletes' success doesn't just benefit the winners; millions watch them compete and prove that they are the best at what they do, and share their joy.

New generation in dentistry

This summer, we welcome the new cohort of young dentists to our profession and, like the Olympics, we all recognise and celebrate their achievement. These new graduates have already had to adapt to significant disruptions to their training due to the pandemic and I admire the students I have met for the determination and professionalism they have shown in coping with this. Some of us have directly supported these young graduates, as professors or supervisors, or as parents, siblings or friends. We recognise and enjoy their success after years of learning, practicing and improving what they do. Graduation is a culmination of these efforts and also a beginning of the next phase of learning and developing as professionals.

Like our athletes, our young dentists rely on resourcing, infrastructure, and the support of coaches and teammates to flourish. In this issue, our President Clodagh McAllister speaks about how she has valued her involvement in the IDA community. She also talks about the impact that poor resourcing and infrastructure is having on dental services. While we naturally focus on what patients need, a recent survey carried out by the British Medical Association highlighted the negative impact that poor-quality services have on professionals. The term 'moral distress' refers to the psychological impact on professionals when they are constrained in their ability to provide a high standard of care: "It is the feeling of unease from situations where institutionally required behaviour does not align with moral principles. This can be a result of a lack of agency, power or structural limitations such as insufficient staff, resourcing, training or time".[1]

We recognise the negative impact that poor services and long waiting lists have on patients and families. Long waiting times can also create clinical problems that become more complex and difficult to treat, which impacts on the clinical team and the cost of provision of care. We are trained to high standards and clinicians can experience moral distress when they cannot provide timely treatment or the standard of care they are trained to. Our members' news section in this issue reports on the results of our survey on the Dental Treatment Services Scheme (DTSS) and our collective duty to the next generation of patients and dental professionals to rethink, restructure and reinvest in our dental services. I also thank Will Rymer for sharing his perspective with us in our My IDA section.

Clinical content

In this issue, a recent graduate, Mohammend El Azrak, has restructured his prizewinning dissertation on the prescription of antibiotics in implantology and I congratulate him on this piece of writing and thank him for sharing his research with us. Roisín Farrelly has provided a valuable update on the new legislation on medical devices and the responsibilities of dentists and manufacturers of custom devices.

When families are coping with a difficult medical diagnosis and a schedule of hospital appointments for treatment, dental care may not be their priority until a problem arises. Dental teams can support both management of oral symptoms of systemic disease and long-term oral health during this time. In this issue, Aisling Cant has reviewed the complications childhood cancer treatment can create in the developing dentition, and in dental and orthodontic treatment. The second part of our clinical feature on care for people with cystic fibrosis focuses on the oral implications for those undergoing organ transplant.

Many thanks to all our contributors, our Editorial Board, and for the continued support of our advertisers. The *JIDA* is open access and is available on the IDA website with a comprehensive archive. There is also an option to subscribe to receive a digital issue.

Reference

1. **British Medical Association.** Moral distress and moral injury: recognising and tackling it for UK doctors. Available from: https://www.bma.org.uk/media/4209/bma-moral-distress-injury-survey-report-june-2021.pdf

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Dr Clodagh McAllister
IDA President

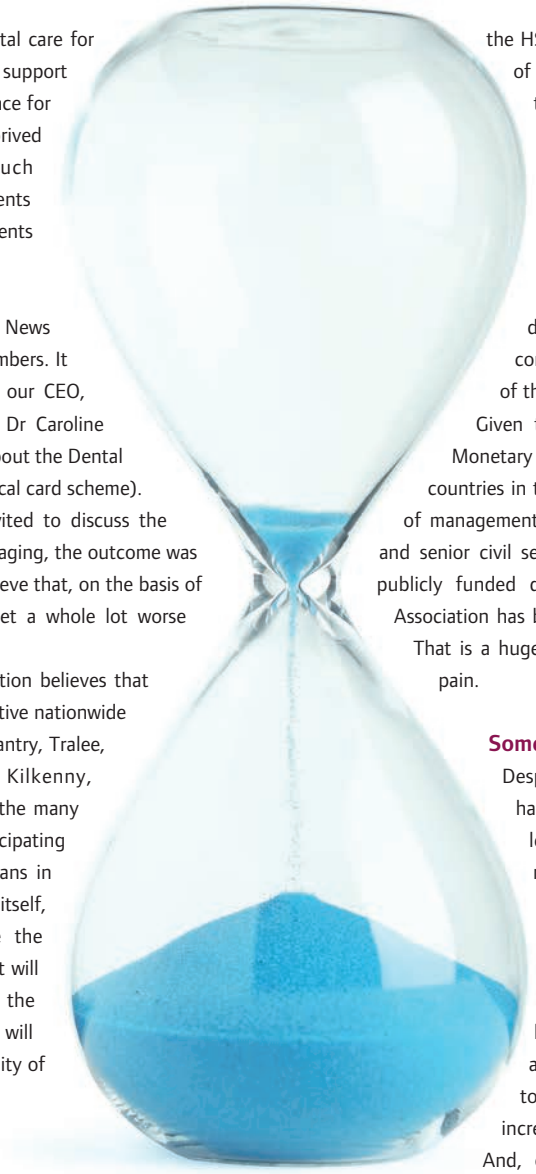
A successful economy, failed policies

A series of figures that have emerged recently demonstrate that despite the resilience of the economy, there is long-lasting oral pain caused by policy failure.

"Dentists want to see access to dental care for all sections of the community and support the concept of State-funded assistance for those in lower income groups or deprived circumstances. However, any such scheme has to work for dentists, patients and the State; the current arrangements don't work for anyone."

That quote is from our story in the Members' News section reporting on the recent survey of members. It is quoted in the context of a meeting that our CEO, Fintan Hourihan, and GP Committee Chair, Dr Caroline Robins, had with the Department of Health about the Dental Treatment Services Scheme (DTSS – the medical card scheme). While the fact that the Association was invited to discuss the medical card scheme might be seen as encouraging, the outcome was not satisfactory. Both Caroline and Fintan believe that, on the basis of this initial meeting, the current crisis will get a whole lot worse before things get any better.

That is tragic because right now the Association believes that there are not much more than 800 dentists active nationwide in the Scheme. Many areas are severely hit. Bantry, Tralee, Killarney, Waterford, Wexford, Carlow, Kilkenny, Portlaoise, Roscrea and Dundalk are among the many large towns facing a critical shortage of participating dentists. It should be evident to the politicians in those areas, and to the Department of Health itself, that many dentists cannot viably operate the Scheme. The Association is left to wonder if it will take complete and utter collapse before the Department will introduce a new scheme that will allow dentists to provide the volume and quality of oral healthcare needed by their patients.



Public dental service

Sadly, we also see the effects of neglect and underfunding on the HSE Dental Service. As our immediate past President, Dr Anne O'Neill, pointed out recently, the Covid-19 pandemic has had a massive impact on the service, which had been the subject of shocking under-investment for many years previously. We learned in the Dáil that staff available to provide dental care in the HSE public dental service fell by 23% over the course of the pandemic. Fintan Hourihan pointed out that in the preceding decade, the number of dental staff in the HSE had fallen by 23% while the number of patients eligible to receive treatment from the HSE had grown by 20%. The pandemic has therefore exacerbated a crisis in HSE dental service provision. The result is that the gap between those who can and those who cannot afford to access dental care has widened further. A further consequence is a serious deterioration in the oral health of those children who cannot access dental care.

Given that we live in a Republic that the International Monetary Fund and the World Bank both rank in the top ten countries in the world for GDP per capita, this is clearly a failure of management, not resources. Until some enlightened politicians and senior civil servants realise the consequences of the failings of publicly funded dental treatment schemes in Ireland (which the Association has been calling out for years), we will not see change. That is a huge policy failure that causes actual not metaphorical pain.

Some positives

Despite all of the above, there are many good things happening in Irish dentistry. Many of us have learned lessons from the pandemic. As we emerge from it, we must ask ourselves what good things have happened in our practices as a result of the pandemic that we should retain. Is our infection control and prevention even better than it was? Is our patient management more effective? Have we worked out a better system for managing appointments and avoiding missed appointments? These are all issues to reflect on as the number of vaccinated people increases significantly.

And, of course, there are our Colgate Caring Dentist Awards. They are an opportunity for patients to say thank you to their dentists for the wonderful care that has been provided. We have had so many brilliant dentists highlighted by our patients in our Awards over the years. I really look forward to hearing this year's winning cases and meeting as many of you as possible at our Awards ceremony later this year.

Our achievements

The IDA has been working hard for members over the years and has launched a new section on its website, highlighting some of the things that have been achieved over the past number of years. This new section is particularly useful for dentists who are thinking about joining the IDA, as it sets out what a professional group can help individual members with. The topics covered include:

- offering leadership and guidance during the Covid-19 pandemic;
- securing significant improvements in PRSI scheme income for dentists;
- defending and representing dentists holding DTSS contracts;
- representing practice owners with State and private third-party agencies;
- negotiating huge financial savings for our members;
- helping individual dentists in difficulty;
- promoting oral health;
- representing public service dentists;
- helping business owners to build their practices; and,
- lobbying on behalf of dentists.

All of these benefits can be viewed at: www.dentist.ie/why-join/our-achievements.8450.html.

New Professor

Congratulations to Dr Máiréad Harding, who has recently been appointed as Professor in Dental Public Health and Preventive Dentistry and as Director of the Oral Health Services Research Centre at the University Dental School and Hospital, Cork. Dr Harding leads the Masters in Dental Public Health offered by the School of Dentistry. She has extensive experience in supervising and examining research students from across Ireland and other countries, and is a member of the Editorial Board of the *Journal of the Irish Dental Association*.

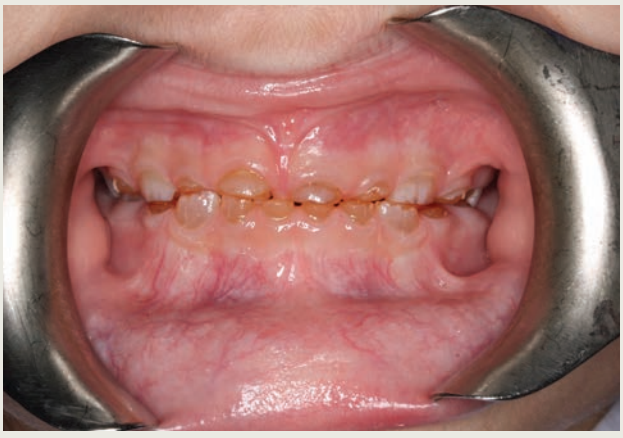
Quiz

Submitted by Dr Kunal Patel.

Questions

1. Pictured is an anterior view of a four-year-old patient with good oral hygiene, and a low cariogenic and low acidic diet. Her mother is unhappy with the appearance and mentions crumbling teeth. What is the most likely diagnosis?
2. What is the most common medical condition associated with this condition?
3. What is the most common associated dental feature of patients with this condition?
4. How would you manage this condition?

Answers on page 219.



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Review of dental fees

The Association has conducted a review of fees charged privately by dental practices for a range of treatments. The survey of fees was carried out in June 2021 and is based on a review of the fees published on the websites of a representative sample of approximately 100 dental practices, covering all counties within the Republic of Ireland, both urban and rural, and of a range of sizes.

The information we have collected is freely available public information and we have collated it for the convenience of members. Members are advised that these figures should not be regarded as recommended fee levels or constitute guidance in the setting of fees. The setting of fees is a matter for individual dentists to decide having regard to the circumstances and operating costs pertaining to their practice. Following our review of fees charged for common dental treatments, the averages are shown in **Table 1**.

The IDA completed the same fee review exercise in December 2015. When comparing the average fees charged privately in June 2021 with the average fees charged in December 2015, we can see that fees have increased by between 11% and 35% for the various treatments, depending on treatment type.

Table 1: Average prices for dental treatments in private practice.

Treatment	Average fee
Examination	€45.35
Restoration amalgam	€99.02
Restoration composite	€122.70
Exodontics under local anaesthetic	€104.40
Surgical extraction	€166.00
Root canal molar	€584.16
Scale and polish	€69.06
Denture repair	€85.79
Prosthetics acrylic	€637.40
Prosthetics metal chrome	€1057.28

**Please note that where sites have published ranges for certain treatments, we have chosen the midpoint of the range.*

Upcoming events

Basic Life Support and Medical Emergencies Courses:

September 18	Radisson Blu Hotel, Dublin Airport
September 25	Rochestown Park Hotel, Cork
October 16	Connacht Hotel, Galway
November 6	Meadowlands Hotel, Tralee

OTHER EVENTS

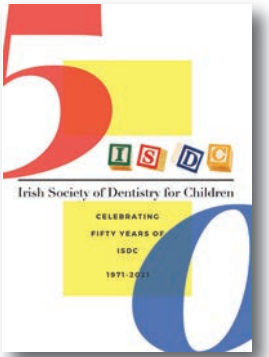
HSE Dental Surgeons AGM and lecture

Thursday, October 7 – Online lecture

Retirement Seminar 2021

Friday, October 8 – Crowne Plaza Hotel, Santry

ISDC online conference



The Annual Scientific Meeting of the Irish Society of Dentistry for Children was held online on May 13. It is a milestone year for the Society, which was founded in Cork 50 years ago. The meeting sparked great interest, and members from near and far came together virtually to mark the occasion. As part of the celebrations, Prof. Denis O'Mullane, founder member, provided a unique perspective on the origins and future of the Society, and Dr Marcelo Bönecker, President of the International Association of Paediatric Dentistry, shared a joyful anniversary tribute. Congratulations to Dr Breda Martin, Louth Primary Community Care, who was awarded the O'Mullane Prize. Happy birthday, ISDC!

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Running smoothly

Dr Clodagh McAllister has many things on her agenda as IDA President, including the DTSS contract and Covid-19, but says her number one aim is to continue the steady governance of the IDA.

It was Clodagh McAllister's mother who first impressed upon her the benefits of being part of a collective, she says: "My mother was a pharmacist, and she was very involved in the Irish Pharmacy Union. She kept telling me I should join the IDA because it's good to be part of a professional group – many voices are better than one voice".

Prior to becoming President-Elect last year, Clodagh really got involved in the work of the IDA about five years ago, when she was asked to join the GP Committee. It was not something she ever saw herself doing but found that once she started, she got a lot out of helping her fellow dentists: "I had never had any desire to be involved in the actual politics of the IDA but once I got on that committee, I really enjoyed it".

Aims and ambitions

Clodagh believes the IDA is governed well and aims to keep that going for her year as President. Other important goals for her include representing members to the best of her ability and hopefully increasing membership.

When it comes to the DTSS, Clodagh believes it is time the Government offered dentists and patients something new: "It's not a sticking plaster we want on the contract now. We need a new contract for the current climate because I think the medical card contract was originally initiated in 1994, so that's nearly 30 years ago".

> *"Part of the reason Clodagh decided to take on the PRSI scheme is the supports that were introduced after the successful negotiations between the IDA and the Department of Social Protection.*

It's not a scheme Clodagh operates in her practice in Fairview in Dublin, and one thing she is keen to promote is independent practice: "I was always very into being independent, so that's another one of my goals, to promote independent practice. It probably would have been a great thing to do, the medical card scheme, in the beginning because it would have got you busy fairly quickly but I decided that I wanted to be fully private, so initially I did neither the PRSI nor the medical card schemes, but in the past couple of years, we've started doing the PRSI scheme".

Part of the reason Clodagh decided to take on the PRSI scheme is the supports that were introduced after the successful negotiations between the IDA and the Department of Social Protection, she says: "They weren't trying to cover everything because I didn't want a third party running my business or being in control of my business. Also, it meant that a lot of my patients who were self-

Colm Quinn
Journalist with Think Media

employed were now going to be covered, so I felt it was important to offer them the opportunity, particularly when the cost to me was more or less the same as my private fees".

The problems with the DTSS contract run deep and Clodagh says it remains the biggest challenge for dentists in Ireland right now. It is not just the low level of fees that is a problem, but also the two-tier way it forces dentists to treat patients: "It has limited treatments that you can offer the patients, so you're not treating people equally. You don't have the same choice to treat your medical card patients with the same options as private patients. The second thing is that the contract is outdated. I don't want to labour the point of the fees too much, but they are totally at odds with private practice fees. I think the final straw that broke the camel's back was when [the Department of Health] didn't honour their agreement to give PPE to practitioners. Last June it was promised for practitioners who do the medical card scheme, because the cost of the PPE is making dentistry very expensive".

The way the scheme forces dentists to treat patients is completely at odds with how dentists are trained, explains Clodagh: "It covers as many extractions as you like but only two fillings in a year, so there's no preventive element to it whatsoever. It puts patients and dentists in a position where they have no alternative but to be extracting teeth when they should be saving them. They're just postponing the problem. In the future, there will be an issue with people who have no teeth. They promote as many extractions as you like, but they don't allow for the making of dentures, except in special circumstances. They're not offering a modern-day service to the public and that goes against what dentists are trained to do. The main thing they're trained to do is apply prevention first and foremost. The same services should be available to everybody, regardless of your socioeconomic group".

Pandemic strain

During the pandemic, dentists have had to extend appointment times or put more time between patients, which means they can see fewer patients per day and this adds to the pressure of stressed practice finances, explains Clodagh: "We're doing that as well but we're quite lucky in that I took on an extra member of staff to have somebody to clean up so that we could work between a couple of different surgeries. We've kind of weathered that storm but that is an issue where you don't want too many people in the waiting room, so you're doing longer appointments, the turnaround is not as quick as it was, so that definitely will have an impact on finances".

Staffing of the entire dental team is becoming harder for practices as well, says Clodagh: "Another difficulty in private practice is employing dentists. It's very hard to get staff as everyone seems to be in full employment. It's really hard to get younger dentists. They are really shying away from the medical card scheme. There's definitely a shortage of support staff, like nurses, and hygienists are very thin on the ground".

Not equipped

Clodagh says the Public Dental Service is currently not equipped to do the job it is supposed to be doing. The dentists are committed and willing, but there simply aren't enough of them. Covid has only exacerbated this, she explains: "A lot of them have been redeployed to Covid services; previously they were testing and now they're vaccinating. There's a whole cohort of children not being seen. And quite a number of private practitioners have come out of the medical card scheme, so now there's a whole cohort of adult patients who are finding it difficult to access care. I think the Government has let them down in that it hasn't funded the public service to the level that it should in order to provide cover and proper care for medical card patients".

In comes the new national oral health policy, with its ambition of moving much of the public service's work onto private practitioners, despite there being no meaningful engagement with the IDA: "I don't see the capacity in private practice to do that. They're literally abandoning patients. What they're doing is giving the problem to another group whereas they fund a public health service, but they're not willing to properly fund a public dental service. Without having consultation, to think that dentists are going to take on a whole load of new patients and children, there definitely isn't the capacity in private practice to do it".

If the IDA had been involved in the formulation of the new policy, Clodagh says what was published could have formed the basis for a discussion on what needs to be done: "Yet again it's the same problem in that there's a lack of consultation. It's very hard to get the Department of Health to actually discuss things with you. Perhaps the only saving grace would be if they used it as a stepping stone to further discussions to come up with a plan that would actually work for everybody – for dentists, for the public service and the patients".

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Communication

Clodagh speaks a lot about the need for the IDA to continue to communicate well with its members, and cites the continuing efforts to improve this, such as the Association's new customer relationship management (CRM) system, which should help the IDA to liaise with members better. She wishes the Department of Health would take on board an attitude of improving communication when it comes to discussions with dentists: "First of all if they would reply to us in a reasonable length of time and actually engage in meaningful consultation … It is hard to engage them".

Another long overdue piece of dental work for the Government is the introduction of a new Dental Act to replace the current Dentists Act 1985: "In fairness to the Government, things have come in their way and they've been dealing with Covid this past year, but there seems to be no will to want to move [the Dental Act] along. They don't seem to rate dentistry as something important, despite the fact that lots of dental issues impact on medical issues, and they should view medicine and dentistry as a whole rather than as separate entities".

Clodagh advises dentists to stay strong and be part of the collective that is the IDA, as a group is always heard better than an individual: "I would encourage non-members to join the IDA. There are many advantages but the main one is being part of a group, where you have colleagues to help you out. We do have a mentoring service. We also have a mental health service, the Practitioner Health Matters Programme, and apart from that I would advise dentists to have hobbies and interests that take them away from the day-to-day strain of the job, and particularly if you're a practice owner, the day-to-day strain of running a business".

Profile

Clodagh is originally from Co. Mayo and did her Leaving Cert and dental training in Dublin, qualifying in 1992. She then took what was a familiar path to those that qualified around that time, she says: "When I left college, like everyone else at the time, I went to work in the NHS, in Northern Ireland. I worked there for four years and then I went off travelling for two years. When I came back in 1999, I did a few locums and then I bought a practice in November 1999 in Fairview".

Around 2001, she took a job in the DDUH as a clinical supervisor and teaches in the Advanced Restorative Department. She also has a postgraduate diploma in conscious sedation in dentistry from King's College London.

She has a ten-month-old shih tzu named Ferdi, and in her spare times enjoys ballet, yoga, bridge, and playing piano.

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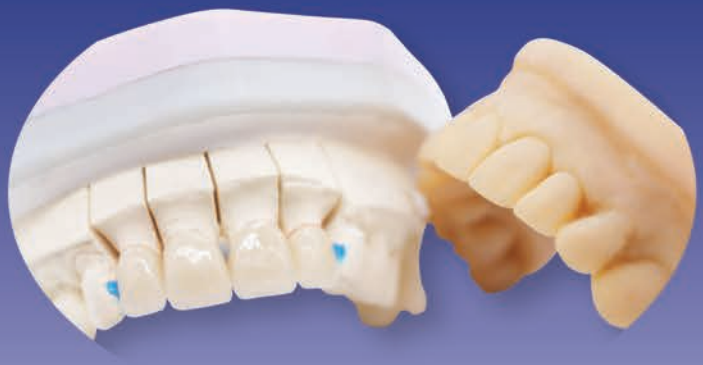

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Review your first aid arrangements

Dr Jane Renehan, Dental Compliance Ltd, urges dentists to annually review their first-aid arrangements. There is an obligation on employers to maintain a well-stocked first aid station under the control of a responsible person.

Jane tells us that Health, Safety and Welfare at Work (Regulations 2007) advise that first aid arrangements should depend on the level of risk in a workplace. The term first aid is used in the regulations to cover events ranging from preserving life to managing a minor injury. Based on her experience working with dental practices, Jane is confident that most dental practices are well trained and equipped to handle medical emergencies. However, processes for dealing with minor injuries of employees, patients and others who attend the practice may not always be as compliant. Summarising the first aid regulations, Jane recommends:

- a first aid responsible person should be appointed and named in the practice safety statement – this person should keep the first aid box well stocked and up to date;
- a designated first aid station should be suitably marked by means of a sign, easily accessible and ideally located where the most hazardous processes occur, e.g., surgery or decontamination room;
- a dental practice first aid box should contain burn dressings, eye wash solution and eye pads, wound dressings, a variety of adhesive plasters and bandages, safety pins, paramedical shears, disinfectant wipes, and sterile water (list is not exhaustive); and,
- contact details for local emergency services should be clearly displayed at the first aid station.

Health and Safety Authority (HSA) inspectors can request details on first aid events, so Jane recommends keeping a small notebook in the first aid box to record simple details, such as names of persons involved, type of injury, date and action carried out.

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1. Data on file at Align Technology, as of January 29, 2020

Brilliant Coltene

From Coltene comes Brilliant Crios reinforced composite bloc. The company states that it is suitable for broad daily use, has excellent mechanical properties and aesthetics with two translucencies, and 13 shades are available. According to Coltene, Crios is particularly suitable for bruxism patients and for implant-supported crowns, because of its shock-absorbing features.

Also available from Coltene is Brilliant EverGlow, which is a submicron hybrid universal composite. According to the company, it offers sculptability, a smooth consistency, polishability and a versatile shade system.

Coltene states that its Affinis impression materials offer different washes, putties, working and setting times, and consistencies to suit any situation. According to the company, Affinis materials are not only great to work with, but they will also be well tolerated by your patients and your laboratory, enabling successful teamwork.

Coltene states that Affinis Precious has superior flow properties and comes in gold and silver colours, reducing the light-scattering effect, to capture all surface detail.

IDS 2021

The International Dental Show (IDS) returns this year as a hybrid in-person/online event. It will take place in Cologne, Germany, from September 22-25. The show will feature exhibitors from across the world and the dental industry, as well as an online series of lectures and seminars. Tickets are available to attend in person or for just the online show, IDSconnect. Find out more at: www.english.ids-cologne.de.

World Dental Congress

The FDI's World Dental Congress – Special Edition is an online event this year. The organisers state that the event will bring together leaders from across the world in dental practice, research, academia and industry to present quality, innovative and effective continuing education.

There will be over 200 scientific sessions, and topics covered will include tackling antibiotic resistance, sustainability and many more. The sessions will be available on demand and live from September 26-29. The on-demand availability period extends to 60 days beyond the main Congress days, which has never been offered to participants before. To find out more, visit: https://2021.world-dental-congress.org/.

Up the hill for Jack and Jill!

On Saturday, June 26, Pat Bolger of Henry Schein Ireland, along with a group of fellow members of Naas Cycling Club, undertook the toughest climbing challenge in the world – to cycle the height of Mount Everest in one day – in aid of the Jack and Jill Children's Foundation, which provides home-based care to children under six who have life-limiting conditions.

The rules to 'Everesting' are simple: one climb up and down without any deviation from that hill until finished – 8,848 vertical metres. Pat's group chose Sorrell Hill in Wicklow, with a climb of 257m over 4.5km, or a total of 35 repeats. All three cyclists completed the minimum 8,848m. Pat began his trek at 12.00am and finished at 12.10am the next day – a little over 24 hours.

There have been 86 Everests completed in Ireland so far, and Pat is now ranked number one; that is, he is the oldest to have completed this gruelling challenge. He said: "Thanks to everyone who came out to support us throughout a long day, and special thanks to the lads who did some repeats alongside us". Congratulations Pat on a fantastic achievement! The funding page for this event is still open, and every €18 raised covers one hour of much-needed nursing support. If you would like to donate to this very worthy cause, please go to **www.justgiving.com/fundraising/paddy-bolger1**.

Skudexa ▽® 75 mg/25 mg film-coated tablets (tramadol hydrochloride/dexketoprofen). Abbreviated Prescribing Information
Please consult the Summary of Product Characteristics (SmPC) for full prescribing information. **Presentation:** Film-coated tablets containing tramadol hydrochloride 75 mg and dexketoprofen 25 mg. Excipients with known effects: croscarmellose sodium and sodium stearyl fumarate **Use:** Symptomatic short term treatment of moderate to severe acute pain in adult patients whose pain is considered to require a combination of tramadol and dexketoprofen. **Dosage:** Adults: 1 tablet (75 mg tramadol hydrochloride/ 25 mg dexketoprofen), additional doses as needed with a minimum dosing interval of 8 hours. Maximum daily dose 3 tablets/day. Use lowest effective dose for the shortest duration necessary to control symptoms. Maximum duration of use is 5 days. Patients with mild-moderate hepatic dysfunction or mild renal dysfunction: maximum daily dose is 2 tablets/day. Elderly: initial dose is 2 tablets/day can be increased to a maximum of 3 tablets/day after good tolerance established. Use with caution in patients over 75 years. **Contra-indications:** Hypersensitivity to any component or other NSAID or excipients. NSAID induced attacks of asthma, bronchospasm, acute rhinitis, or nasal polyps, urticaria or angioneurotic oedema. Known photoallergic or phototoxic reactions during treatment with ketoprofen or fibrates. History of gastrointestinal bleeding or perforation, related to previous NSAIDs therapy. Active peptic ulcer/gastrointestinal/ haemorrhage or any history of gastrointestinal bleeding, ulceration or perforation, chronic dyspepsia, other active bleeding or bleeding disorders, Crohn's disease or ulcerative colitis, severe heart failure, moderate-severe renal dysfunction, severe hepatic dysfunction, haemorrhagic diathesis and other coagulation disorders, severe dehydration. Acute intoxication with alcohol, hypnotics, analgesics, opioids or psychotropic medicinal products. Concomitantly with MAO inhibitors or within 14 days of having taken them. Inadequately controlled epilepsy. Severe respiratory depression. Pregnancy and lactation. **Warnings and precautions:** *Dexketoprofen:* Caution in allergic conditions. Avoid use with concomitant other NSAIDs including COX-2 selective inhibitors. Gastrointestinal bleeding, ulceration or perforation which can be fatal, have been reported with all NSAIDs at anytime during treatment, with or without warning symptoms or a previous history of serious gastrointestinal events. When gastrointestinal bleeding or ulceration occurs withdraw treatment. The risk of gastrointestinal bleeding, ulceration or perforation is higher with increasing NSAID doses, in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation, and in older people. Ensure cure of oesophagitis, gastritis and/or peptic ulcer before starting treatment. Consider combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors), and in patients requiring concomitant low dose aspirin, or other drugs likely to increase gastrointestinal risk. Monitor patients with a history of gastrointestinal toxicity, particularly when elderly, for unusual abdominal symptoms (especially gastrointestinal bleeding) particularly in the initial stages. Caution in patients receiving oral corticosteroids, anticoagulants, SSRIs or anti-platelet agents. Caution in patients with impairment of renal function, receiving diuretic therapy or those who could develop hypovolaemia. Ensure adequate fluid intake. Caution in liver impairment. Appropriate monitoring and advice required with history of hypertension and/or mild to moderate heart failure. Special caution in patients with cardiac disease, especially episodes of previous heart failure. Only treat patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease, and/or cerebrovascular disease after careful consideration. Similarly for risk factors for cardiovascular disease (e.g. hypertension, hyperlipidaemia, diabetes mellitus, smoking). Caution in haematopoietic disorders, systemic lupus erythematosus, connective tissue disorders, impairment of hepatic and/or renal functions, history of hypertension and/or heart failure, diuretic therapy, the elderly. Older people are more likely to be suffering from impaired renal, hepatic and cardiovascular function. Serious skin reactions (some of them fatal), including exfoliative dermatitis, Stevens-Johnson syndrome, and toxic epidermal necrolysis were reported very rarely. Particular caution is required in patients with congenital disorder of porphyrin metabolism, dehydration, directly after major surgery. Severe acute hypersensitivity reactions have been observed on very rare occasions. Discontinue treatment at the first signs of severe hypersensitivity reactions. Can cause asthma attacks or bronchospasm, particularly in subjects allergic to acetylsalicylic acid or NSAIDs. Avoid use in case of varicella. Do not use with warfarin, other coumarins or heparin. Can mask the symptoms of infectious diseases. *Tramadol:* Use with particular caution in patients with an addiction, head injury, shock, reduced level of consciousness of uncertain origin, disorders of respiratory centre or function or increased intracranial pressure. Use with caution in patients sensitive to opiates. Care should be taken in treating patients with respiratory depression, with concomitant CNS depressant drug administration or significant excess of the recommended dose as resulting respiratory depression cannot be excluded. Convulsions have been reported with recommended doses of tramadol, this risk may increase when exceeding the recommended upper daily dose limit (400mg). Seizure risk increases in patients taking other seizure threshold lowering medications. Only treat patients susceptible to seizures with tramadol if circumstances are compelling. Tolerance, psychic and physical addiction may develop. For patients with abuse/dependence potential only treat for short periods under strict medical supervision. Consider tapering dose gradually when discontinuing treatment to prevent withdrawal symptoms. CYP2D6 deficiency may reduce the analgesic effect, whereas ultra-rapid metabolisers of CYP2D6 incur risk of opioid toxicity even at commonly prescribed doses. Extreme caution and close monitoring for opioid toxicity required when administering tramadol to children for post-operative pain relief. Not recommended in children with compromised respiratory function. *Skudexa:* Not for use in children and adolescents. Concomitant use with sedative medicines such as benzodiazepines or related drugs should be reserved for patients with no alternative treatment options, using the lowest effective dose and an as short as possible treatment duration while following them closely for signs of respiratory depression and sedation. **Interactions:** Dexketoprofen: Other NSAIDs, anti-coagulants, heparins, corticosteroids, lithium, methotrexate, hydantoines and sulphonamides, diuretics, ACE inhibitors, antibacterial aminoglycosides and angiotensin II receptor antagonists, pentoxyfilline, zidovudine, sulfonylureas, beta-blockers, cyclosporin and tacrolimus, thrombolytics, anti-platelet agents and SSRIs, probenecid, cardiac glycosides, mifepristone, quinolone antibiotics, tenofovir, deferasirox, pemetrexed. *Tramadol:* MAOIs, coumarin derivatives (e.g. warfarin), mixed agonists/antagonists opioid receptors (e.g. buprenorphine, nalbuphine, pentazocine), SSRIs, SNRIs, tricyclic antidepressants, antipsychotics and other seizure threshold-lowering medication (e.g. bupropion, mirtazapine, tetrahydrocannabinol), sedative medicines such as benzodiazepines, centrally depressant medications or alcohol, cimetidine, carbamazepine, ondansetron (5-HT3 antagonist) and substances inhibiting CYP3A4 (e.g. ketoconazole, erythromycin). **Pregnancy and lactation:** Contra-indicated during pregnancy and lactation. Do not use in women attempting to conceive. **Side-effects:** *Skudexa: Common (≥ 1/100, <1/10): dizziness, nausea, vomiting. Uncommon (≥ 1/1000, <1/100):* thrombocytosis, laryngeal oedema, hypokalaemia, psychotic disorder, headache, somnolence, periorbital oedema, vertigo, tachycardia, hypertensive crisis, hypotension, abdominal distension, constipation, dyspepsia, raised LFTs, face oedema, hyperhidrosis,urticaria, haematuria, asthenia, chills, discomfort, feeling abnormal, BP increased, increased alk phos, increased LDH. For less frequent side effects and side effects associated with the individual constituentssee SmPC. **Pack size:** 15 tablets. **Legal category:** POM A **Marketing authorisation number:** PA 865/20/1 **Marketing authorisation holder:** Menarini International Operations Luxembourg S.A., 1 Avenue de la Gare, L-1611 Luxembourg. **Marketed by:** A.Menarini Pharmaceuticals Ireland Ltd. Further information is available on request to A Menarini Pharmaceuticals Ireland Ltd, 2nd Floor, Castlecourt, Monkstown Farm, Monkstown, Co. Dublin Co. Dublin, Ireland A96 T924 or may be found in the SmPC. **Date of preparation:** January 2020

▽ This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions via HPRA Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: www.hpra.ie; E-mail: medsafety@hpra.ie. Adverse events should also be reported to A. Menarini Pharmaceuticals Ireland Ltd. Phone no: 01 284 6744.

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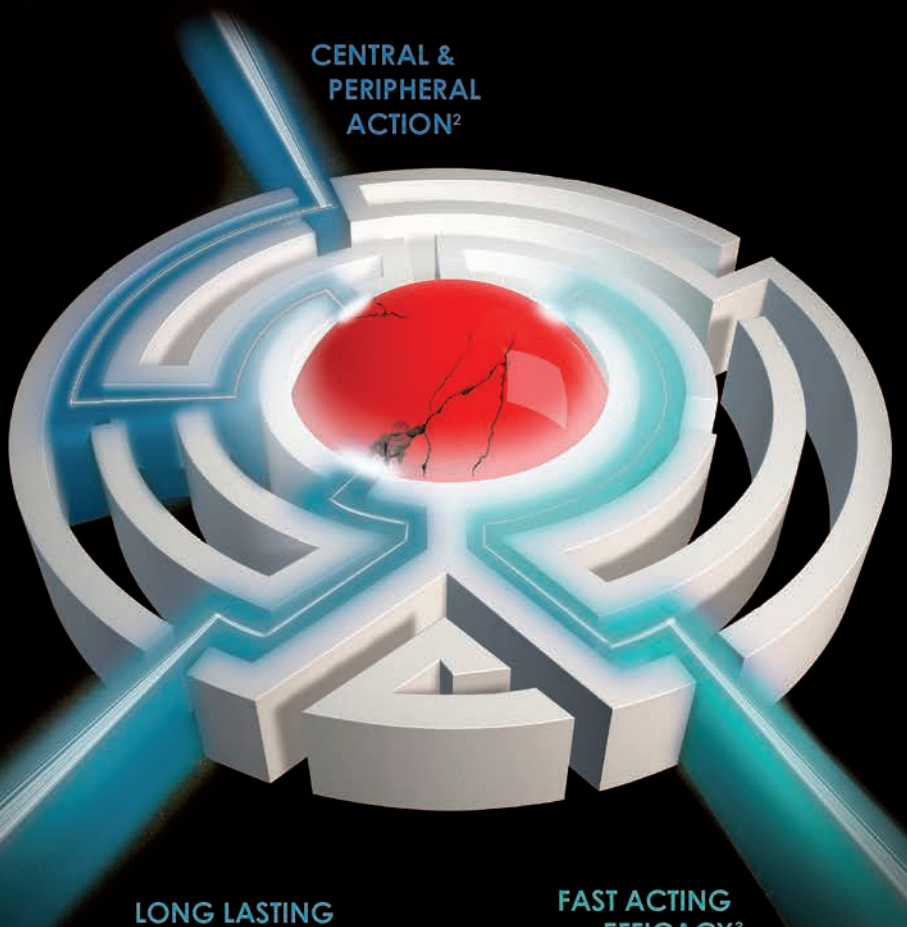

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* In a model of acute pain (third molar extraction) Skudexa demonstrated a median duration of action of 8.1 hours post-dose[3]

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References: 1. Skudexa Summary of Product Characteristics, October 2019 2. Moore RA et al. BMC Anaesthesiol. 2016; 16:9 3. Moore RA et al. The Journal of Headache and Pain. 2015; 16:60 4. McQuay HJ et al. Br J Anaesthesia. 2016; 116:269-276 5. Gay-Escoda C et al. BMJ OPEN 2019; 9:e023715. doi 10.1136/bmjopen-2018-023715
Date of item: January 2020. IR-SKU-19-2019

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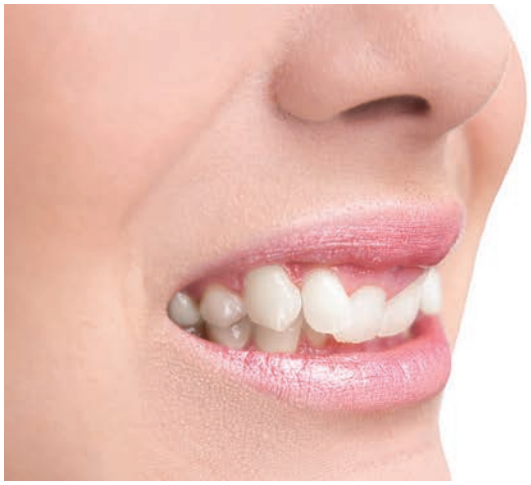
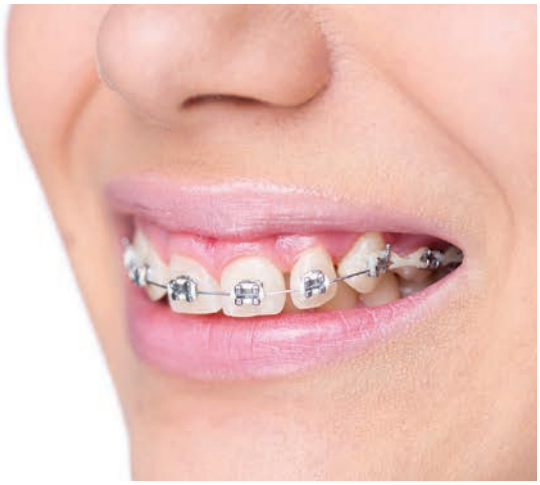
Ethics and aesthetics part II

The second of two articles on 'ethics and aesthetics' looks at some of the key considerations that can help to reduce dento-legal risk when providing cosmetic dentistry, particularly in relation to patient expectations.





The importance of communication in all types of clinical care cannot be overstated. With respect to cosmetic treatment, careful attention to this is absolutely key to understanding what the clinician has been called upon to deliver. What the clinician sees, assesses, and measures in terms of the clinical presentation, and indeed the technical outcome, also needs to be seen through the eyes of the patient. It is, after all, the patient's view that will decide if the treatment is successful in terms of achieving their desired outcome.

'Need' versus 'want'

Treatment that is 'needed' in the clinical sense can be assessed by the clinician and will, by and large, be defined by the attention required to address the damage or pathology present. Cosmetic treatment, on the other hand, is generally elective, and as such chosen to satisfy a 'want' on the part of the patient.

It is important to bear in mind this fundamental distinction. The 'expectation difference' between an intervention intended to repair something and one that is carried out to improve the appearance of something that is intact to start with, can be quite marked. Fixing something broken has a clear end point. Improving something that isn't broken does not.

In providing treatment of any sort, both dentist and patient need to know what the aim is. Treatment addressing an issue based upon what the patient desires rather than needs requires needs very careful consideration. Back to *primum non nocere* and all that.

A clinician can assess need, but only the patient knows what they want. This can be complicated by the fact that some patients are unable to communicate this accurately so it can sometimes appear as if the patient themselves does not know what they want. The danger here is that a clinician faced with this situation may be tempted to use their skills in ascertaining need to identify what they feel the patient wants, or should want, based upon their clinician's perspective.

This approach is perfectly understandable, given our professional grounding in diagnosis and appropriate intervention. However, it can result in misunderstandings from the word go. If so, this will be destined to produce disappointment at a later date when it becomes clear that both parties were aiming towards different destinations.

Working towards a shared understanding

In cases where there is any doubt at all about what the patient is really after, it is essential to delay treatment until both sides have a crystal clear

Some take-home points:

- unrealistic expectations are often not identified or managed at an early stage;
- many complaints and claims arise from patients feeling that their expectations were not met;
- if there is any doubt at all about what is expected, it is wise to hold off on providing treatment; and,
- it is much better to be dealing with a patient unhappy with you for not providing cosmetic treatment than one unhappy that you have.

Dr Martin Foster BDS MPH DipHSM

Martin is Dentolegal Consultant at Dental Protection

understanding of the destination. There should also be a clear grasp of when this will be reached and what it will cost. It may take time to arrive at this shared understanding, but the time committed to this may avoid much delay, inconvenience and frustration at a later date. So, whichever resources are available to assist in achieving this should be used. This could be printed materials, images, videos or other visual aids.

Shared understanding and agreement are, of course, all part of the consent process. Clearly, the patient needs to know what the treatment will involve, which means they should know what the treatment plan is. As every dentist knows, however, despite our best efforts, treatment does not always go according to plan and adjustments occasionally need to be made to accommodate unforeseen difficulties.

Managing the 'impatience factor'

If there is any sort of hitch during cosmetic treatment, for example a delay with the laboratory work or a need for some procedure to be repeated, it is essential to inform the patient as soon as possible. It has to be remembered that treatment that is wanted by a patient will always have a built-in 'impatience factor'. The effect of this will be a tendency for the patient to be less forgiving of delays, so expectations need to be carefully handled. If it becomes clear once treatment has started that the anticipated completion date will not be met, then the patient needs to be advised as soon as possible. It is better for the patient to know well in advance than to be disappointed about this when treatment is nearing completion.

The reason for this is that, as the anticipated date of completion approaches, the patient's level of expectation and sensitivity regarding fault finding can become more acute. It is better not to provide any more opportunities for dissatisfaction creeping in at this point. The whole essence of cosmetic treatment is in the eye of the beholder and a patient who is unhappy about an unexpected delay when approaching the final furlong may express their dissatisfaction by finding fault with the technical result. Following this, they then start to seek reasons for justifying a discount.

It is obviously better to avoid this risk by adjusting the finishing date early on. Better still, remember the old adage of under-promising and over-delivering. It always makes sense to build in some slippage time when providing information on how long or how many visits a course of treatment will take. Patients will not complain if their cosmetic aspirations are met before they were expecting it.

Providing cosmetic treatment carries an increased risk of a 'disappointment gap'. To help reduce this, it is important from the very outset that both patient and dentist have a shared understanding of what a successful outcome will look like, in both senses of the word.

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References: 1. Merry A. et al. AFT-MX-1, a prospective parallel group, double-blind comparison of the analgesic effect of a combination of paracetamol and ibuprofen, paracetamol alone, or ibuprofen alone in patients with post-operative pain. Department of Anaesthesiology, University of Auckland, New Zealand 2008. *compared with the same daily dose of standard paracetamol or ibuprofen alone.

Easolief Duo 500 mg/150 mg film-coated tablets Each tablet contains paracetamol 500 mg and ibuprofen 150 mg. **Presentation:** A White, capsule shaped tablet with breakline on one side and plain on the other side. **Indications:** Short-term symptomatic treatment of mild to moderate pain. **Dosage: Adults/elderly:** The usual dosage is one to two tablets taken every six hours up to a maximum of six tablets in 24 hours. **Children:** Easolief Duo is contraindicated in children under 18 years. **Contraindications:** Severe heart failure, known hypersensitivity to paracetamol, ibuprofen, other NSAIDs or to any of the excipients, active alcoholism, asthma, urticaria, or allergic-type reactions after taking acetylsalicylic acid or other NSAIDs, history of gastrointestinal bleeding or perforation related to previous NSAID therapy, active or history of recurrent peptic ulceration/haemorrhage, severe hepatic failure or severe renal failure, cerebrovascular or other active bleeding, blood-formation disturbances, during the third trimester of pregnancy. **Warnings and precautions:** This medicine is for short term use and is not recommended for use beyond 3 days. Clinical studies suggest that use of ibuprofen, particularly at a high dose may be associated with a small increased risk of arterial thrombotic events. Patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease and/or cerebrovascular disease should only be treated with ibuprofen after careful consideration and high doses should be avoided. Careful consideration should be exercised before initiating long-term treatment of patients with risk factors for cardiovascular events. The use of paracetamol at higher than recommended doses can lead to hepatotoxicity, hepatic failure and death. Patients with impaired liver function or a history of liver disease or who are on long term ibuprofen or paracetamol therapy should have hepatic function monitored at regular intervals. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, though rare, have been reported with ibuprofen. Paracetamol can be used in patients with chronic renal disease without dosage adjustment. There is minimal risk of paracetamol toxicity in patients with moderate to severe renal failure. Caution should be used when initiating treatment with ibuprofen in patients with dehydration. The use of an ACE inhibiting drug, an anti-inflammatory drug and thiazide diuretic at the same time increases the risk of renal impairment. Blood dyscrasias have been rarely reported. Patients on long-term therapy with ibuprofen should have regular haematological monitoring. Like other NSAIDs, ibuprofen can inhibit platelet aggregation. GI bleeding, ulceration or perforation, which can be fatal, has been reported with all NSAIDs at anytime during treatment. Combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors) should be considered. Use with concomitant NSAIDs including cyclooxygenase-2 selective inhibitors should be avoided. NSAIDs may lead to onset of new hypertension or worsening of pre-existing hypertension and patients taking antihypertensive medicines with NSAIDs may have an impaired anti-hypertensive response. Fluid retention and oedema have been observed in some patients taking NSAIDs. NSAIDs may very rarely cause serious cutaneous adverse events such as exfoliative dermatitis, toxic epidermal necrolysis and Stevens-Johnson syndrome. Products containing ibuprofen should not be administered to patients with acetylsalicylic acid sensitive asthma and should be used with caution in patients with pre-existing asthma. Adverse ophthalmological effects have been observed with NSAIDs. For products containing ibuprofen aseptic meningitis has been reported only rarely. NSAIDs may mask symptoms of infection and fever. **Interactions:** Warfarin, medicines to treat epilepsy, chloramphenicol, probenecid, zidovudine, medicines used to treat tuberculosis such as isoniazid, acetylsalicylic acid, other NSAIDs, medicines to treat high blood pressure or other heart conditions, diuretics, lithium, methotrexate, corticosteroids. Refer to summary of product characteristics for other interactions. **Fertility, pregnancy and lactation:** Easolief Duo is contraindicated during the third trimester of pregnancy. **Driving and operation of machinery:** Dizziness, drowsiness, fatigue and visual disturbances are possible after taking NSAIDs. If affected patients should not drive or operate machinery. **Undesirable effects:** Dizziness, headache, nervousness, tinnitus, oedema, fluid retention, abdominal pain, diarrhoea, dyspepsia, nausea, stomach discomfort, vomiting, flatulence, constipation, slight gastrointestinal blood loss, rash, pruritus, alanine aminotransferase increased, gamma-glutamyltransferase increased, abnormal liver function tests, blood creatinine increased and blood urea increased. Refer to Summary of Product Characteristics for other adverse effects. **Pack size:** 24 tablets. **Marketing authorisation holder:** Clonmel Healthcare Ltd., Clonmel, Co. Tipperary. Marketing authorisation number: PA0126/294/1. Medicinal product not subject to medical prescription. For retail sale through pharmacy only. A copy of the summary of product characteristics is available upon request. **Date prepared:** October 2019. 2019/ADV/EAS/117H.

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Oral care for people with cystic fibrosis requiring a solid organ transplant

Abstract

This clinical feature outlines the oral concerns that may arise in patients requiring solid organ transplantation as a result of cystic fibrosis. The aim of the feature is to provide recommendations to dental practitioners for the pre-surgery dental health check and post-transplantation dental management of such patients. It also outlines therapeutic management of solid organ transplant patients who may have oral consequences.

Introduction

Despite major advances in the medical, paramedical and pharmacological management of cystic fibrosis, solid organ transplantation remains a viable treatment option for end-stage pulmonary disease. Increasingly, lung transplantation is offering people with cystic fibrosis whose disease has progressed to a critical stage hope of living a longer and healthier life.[1] In 2019, the Irish Donor Network reported a record number of lung transplants, with 38 lung transplants undertaken, compared with 28 in 2018.[2] In Ireland, lung transplantation is carried out in The Mater Misericordiae University Hospital, Dublin.

The oral cavity is host to more than 700 species of bacteria and represents an important entry point for possible infections. Depending on the level of infection and inflammation present in the mouth, swallowing, aspiration, and small injuries to mucous membranes can all trigger bacteraemia. Normally of no concern in healthy individuals, bacteraemia accompanying dental treatment in patients subject to immune suppression could be considered a potential cause of systemic illness. Dental assessment and appropriate treatment is considered in most transplant centres to be a compulsory prerequisite for solid organ transplantation. However, standardised guidelines providing counsel for pre-transplant dental health are deficient for patient and dental practitioner alike.

Pre-transplantation management

Dental practitioners play an important role in the provision of dental care for patients with chronic pulmonary illness and imminent transplantation throughout their lifetime. An emphasis should be placed on regular attendance, preventive therapies and patient education to ensure continuous, stable oral health. A dental infection has the potential to cause a heightened inflammatory response or result in the cancellation or postponement of a lifesaving transplantation procedure.[3] In the absence of standardised guidelines, pre-transplant dental assessment should focus on the identification and elimination of potential sources of infection. Dentists should also be mindful when conducting this assessment that routine dental treatment is not recommended for six months post transplantation because of a heightened state of immunosuppression.[4]

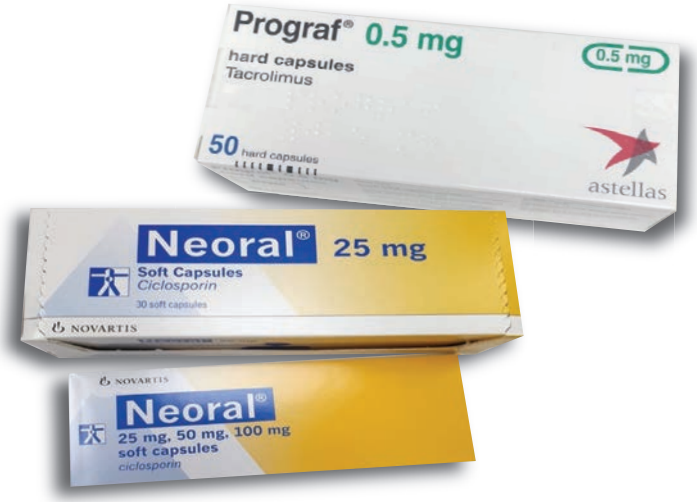

FIGURE 1: Prograf and Neoral are both used for immunosuppression following solid organ transplant.

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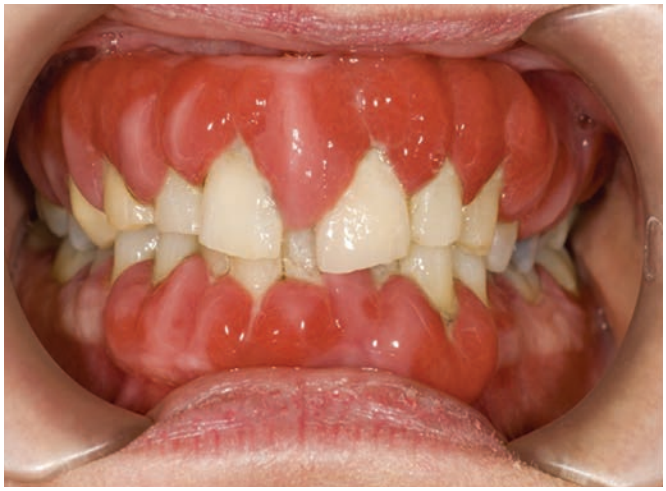

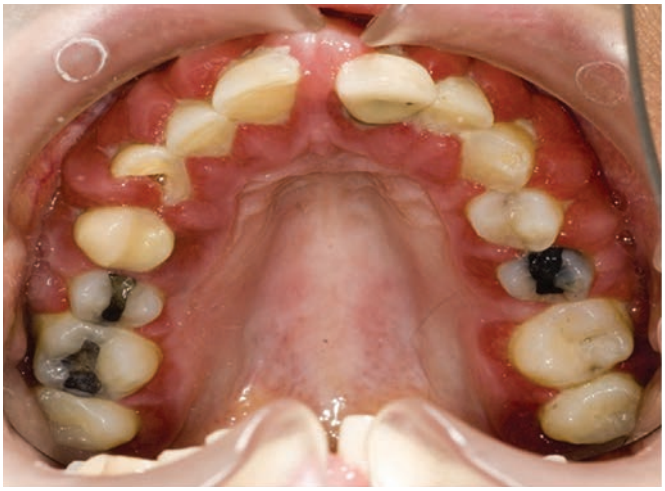

FIGURES 2 and 3: Drug-induced gingival hyperplasia.

Table 1: Post-transplantation medicine

Immunosuppression phase	Medication	Oral complications
Induction therapy	Basiliximab	White patches in mouth, tongue and throat
	Methylprednisolone	Dry mouth, difficulty swallowing, heartburn
	Valganciclovir	Ulcers, sores, white spots in the mouth
	Caspofungin	Cracked lips, sores, ulcers, white spots on the lips, tongue, oral mucosa
	Ceftazidime	Oral candida
	Flucloxacillin Metronidazole	(Medication may be tailored according to microbiological results from donors and recipients)
Maintenance therapy	Tacrolimus	White patches on tongue, throat and oral mucosa
	Cyclosporin	Gingival hyperplasia, sores, white spots, ulcers on lips and in the mouth
	Mycophenolate mofetil	Dry mouth, bleeding gingiva, sores, ulcers and white spots in the mouth

Table 2: Oral conditions reported post transplant.

Leukoplakia
Erythroplakia
Lichen planus
Glossitis
Xerostomia
Halitosis
Gingival bleeding
Dysgeusia
Basal cell carcinoma
Viral infections (Epstein Barr, herpes virus)
Fungal infections (*Candida albicans*)

When conducting a pre-transplant dental assessment, consideration should be given to:

- the patient's previous dental history;
- medical stability;
- attitude to dental care;
- time constraints; and,
- planned future pharmacological therapies post transplantation, i.e., bisphosphonate therapy.

Post-transplant management

Following transplantation, recipients commit to lifelong immunosuppression therapy to prevent organ rejection (**Figure 1**).

Immediately post transplant, induction therapy provides a high degree of immunosuppression. This is supplemented with antimicrobial agents to provide prophylaxis against bacterial and fungal infections. Subsequent lifelong immunosuppression is provided at lower doses during maintenance therapy (**Table 1**).[5]

Immunosuppressive medications can complicate oral health. Drug-induced gingival hyperplasia (**Figures 2** and **3**) caused by the immunosuppressive drug cyclosporin A is a common complication. This risk is further amplified if a patient is prescribed a calcium channel blocker (e.g., nifedipine), has poor oral hygiene and untreated periodontitis.[6] Oral hygiene and the patient's periodontal health play a decisive role in the level of manifestations of such gingival alterations. Oral hygiene education and non-surgical periodontal treatment play central roles in the management of drug-induced gingival overgrowth.[7]

Long-term immunosuppression increases patient susceptibility to pathological oral conditions (**Table 2**).[8] Immunosuppressive drugs are thought to cause malignancy by a carcinogenic effect or by increasing the carcinogenic effect of other agents combined with an immunosuppressive effect.[9] The importance of regular oral examinations is essential so that any dysplastic or malignant changes can be detected early.

Antibiotic prophylaxis

Finally, the prescription of antibiotic prophylaxis for dental treatment following solid organ transplant is ambiguous and can be a source of

concern for many practitioners. Surveys conducted in transplant centres in the US[10] and Germany[11] both concluded that due to lifelong immunosuppression, antibiotic prophylaxis should be given before dental treatment is undertaken. However, with regard to the type of dental measures (invasive or non-invasive procedures) and the choice of antibiotic, no clear recommendations could be established. Irish Dental Council guidelines state that antibiotic prophylaxis should be given to "cardiac transplantation recipients, who develop cardiac valvulopathy". Consideration should be given to the type of antibiotic prescribed due to the increased risk of antibiotic allergy and multidrug resistance in this population. It is the authors' recommendation that dental practitioners seek clarification from the patient's specialist team in the absence of definitive guidelines.

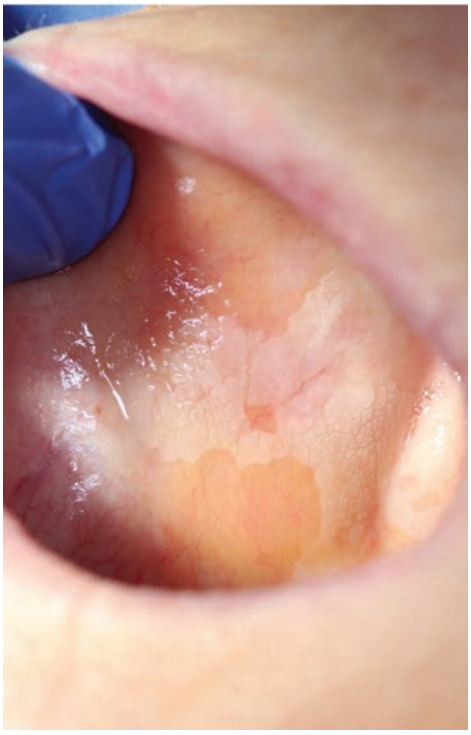

FIGURE 4: Leukoplakia on the buccal mucosa.

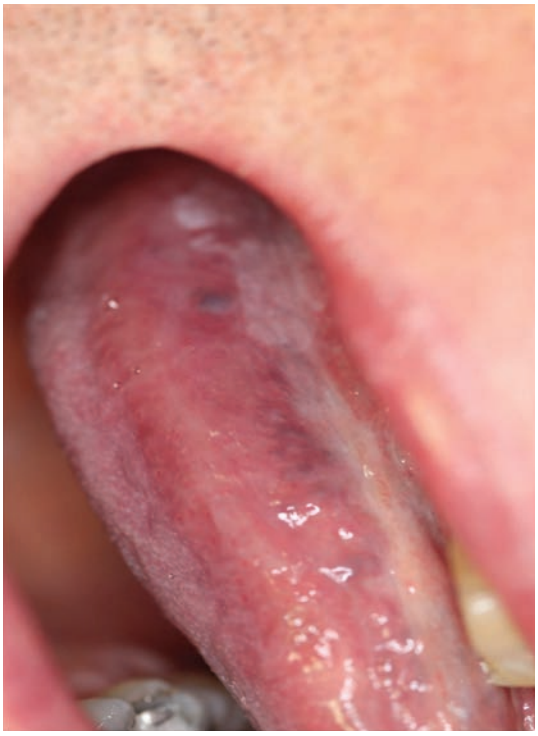

FIGURE 5: Leukoplakia on the lateral border on the tongue.

Comments

A lifetime commitment to pharmacological therapies can jeopardise oral health and make the provision of dental treatment challenging. Dental practitioners play an important role in the promotion of oral health and in patient education. Continuity of dental care with an emphasis on disease prevention is paramount for patients with chronic pulmonary diseases such as cystic fibrosis that may require solid organ transplantation. Currently, there are no formal guidelines regarding the provision of dental care for this medically vulnerable cohort of patients. The authors hope that with ongoing research in this field formal guidelines will be developed to assist practitioner and patient decisions about appropriate healthcare for these specific clinical circumstances.

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Prescription of antibiotics for the prevention of failures and postoperative infections in oral implantology: a literature review

Précis: The evidence does not support routine antibiotic administration for the prevention of dental implant infections and failures in healthy patients. Clinicians should consider the local, systemic and procedural risk factors for each patient before deciding to prescribe prophylactic antibiotics.

This paper won the prize for **BEST FINAL YEAR STUDENT DISSERTATION** at the Dublin Dental School in 2019

Journal of the Irish Dental Association August/September 2021; 67 (4): 207-212

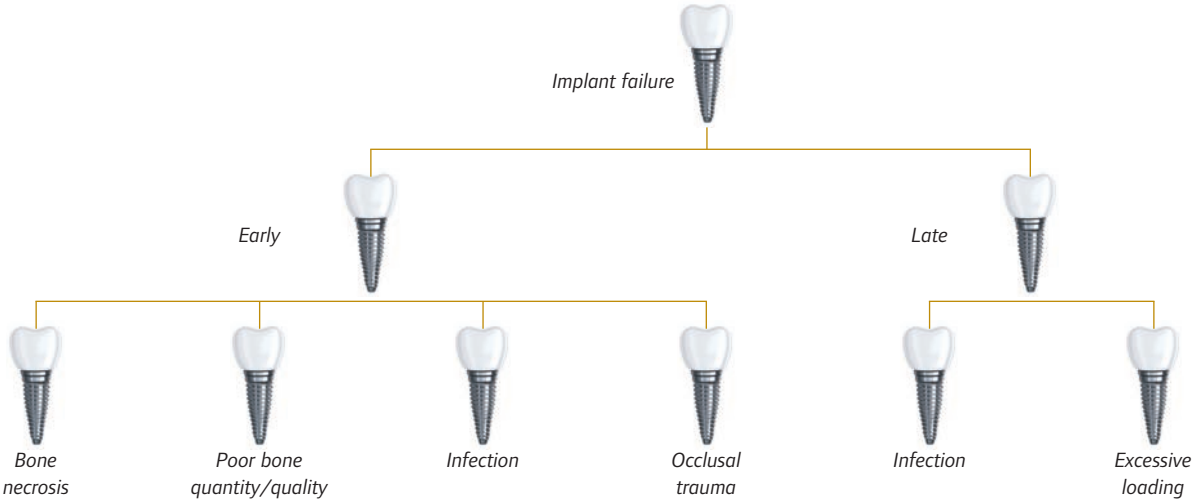

FIGURE 1: Classification of implant failure.

Introduction

The increased success and survival of dental implants reported in the literature has led them to become increasingly popular. Albrektsson estimated that more than 12 million implants are placed annually around the globe.[1] A recent systematic review reported a mean survival value of 94.6% and success rates ranging from 34.9-100% over a mean follow-up period of 13 years.[2]

Antibiotics are a type of antimicrobial agent that kill or slow the growth of bacteria, and they are prescribed by health professionals to treat and prevent infections. Surgical antibiotic prophylaxis can be defined as "the use of antibiotics to prevent infections at the surgical site".[3] There are currently no clear guidelines on antibiotic prophylaxis for implant surgery and antibiotic prophylaxis remains a controversial topic.

Dental implant failure

Dental Implant failures are subdivided into early and late failures (**Figure 1**). Early failure of implants occurs due to lack of osseointegration, while late

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failures occur because osseointegration could not be maintained. Late failures usually occur within the first two years of implant service. Confounding factors that can precipitate infection or implant failure include: the experience of the operator; the degree of asepsis and surgical time; tobacco smoking; certain types of medication; the patient's overall health; and, the patient's oral hygiene practices.[4-6]

Problems with antibiotic prescription

Reports suggest that around 30% of antibiotics prescribed in primary care settings are unnecessary.[7] The prescription of antibiotics is associated with risks to both the individual and the economy. In addition to the risk of side effects or allergic reactions to the patient, over prescription of antibiotics is associated with the emergence of resistant strains of bacteria..[8] Resistant infections can become fatal and the process of developing new antibiotics active against the resistant strains is expensive.

Methods

A literature search was performed in MEDLINE through the PubMed database of the US National Library of Medicine and the Web of Science for articles published until May 2019 using Medical Subject Heading search terms [MESH] + free text terms alone and in different combinations. Key articles that were unavailable electronically were searched manually.

Results

Antibiotic prophylaxis and dental implants

Antibiotic prophylaxis is recommended for surgical procedures in which infection is likely and for surgery where infection results in severe consequences even though it is unlikely.[9] The prevalence of postoperative infection following dental implant surgery ranges from 1.6% to 11.5%.[10] Dental implant infections are difficult to treat, and a lot of infected implants end up being removed.[10] In an attempt to avoid this complication, it has been reported that about 50% of dentists prescribe preoperative and/or postoperative antibiotics to all patients during implant placement.[11-18]

The first two published studies looking at the effect of antibiotic prescription on the outcome of dental implant placement provided conflicting results. Dent *et al.* (1997), in a prospective clinical trial, observed that when preoperative antibiotics were not used, the risk of implant failure increased two to three times (1.5% with preoperative antibiotics vs 4% without preoperative antibiotics).[19] On the other hand, Gynther *et al.* (1998) reported in a retrospective study that antibiotic prophylaxis does not offer any obvious advantage in the routine placement of implants in healthy patients.[20]

RCT comparing one preoperative antibiotic regimen vs no antibiotic (Table 1)

The randomised controlled trial (RCT) published by Kashani *et al.* (2019) is the only one to show a statistically significant difference in implant failure rates between the antibiotic and no antibiotic groups.[21] However, this trial was not placebo controlled and both the randomisation process and blinding are unclear. Additionally, a sub-analysis by the author showed that confounding factors associated with the surgical procedure affected the outcome.

RCTs comparing one preoperative antibiotic regimen vs placebo (Table 1)

Results from four double-blinded RCTs show that a single preoperative dose of antibiotics has no statistically significant effect on the incidence of postoperative infection or implant failure in healthy patients.[22-25] Thankfully, results also show that the risk of adverse events with antibiotic use is extremely low.[22]

The RCT published by Nolan *et al.* (2014) utilised 3g amoxicillin preoperatively as the intervention.[23] Although the differences were not statistically significant, failures and infections occurred only in the placebo group. Results demonstrated that longer surgical time and placement of multiple implants resulted in more implants failing to integrate. This could be explained by the fact that the implants were placed by postgraduate students and operator experience has previously been reported to have an effect on the survival of dental implants.[26]

Similar findings were reported by Anitua *et al.* (2009)[24] and Esposito *et al.* (2008, 2010).[22,25] It is important to note that in the study by Anitua and co-workers, the sample size was low and only patients requiring single implants were included.[24] Additionally, the implants were covered in plasma-rich growth factors (PRGFs) before placement. It has been demonstrated that PRGFs play a role in healing and bone regeneration, and thus this action might have skewed the results. In the two studies by Esposito and co-workers, different surgical approaches and loading times were followed.[22,25] Interestingly, it was found that immediate implants were more likely to fail regardless of antibiotic use.[25]

RCT comparing preoperative plus postoperative antibiotics vs no antibiotics (Table 1)

Abu Ta'a *et al.* (2008) used 1g of amoxicillin one hour preoperatively plus 500mg amoxicillin four times a day for two days postoperatively as their intervention.[27] Implant failure was only noted in those participants who did not receive antibiotics (five implants in three participants). One patient smoked more than 40 cigarettes a day and for the other patient a one-stage protocol was used and the patient had parafunctional habits. Postoperative infection was only detected in one participant in the antibiotic group and in four in the control group.

RCTs comparing multiple regimens of antibiotic prophylaxis (Table 1)

Two multicentre RCTs comparing different antibiotic regimens to each other and to no antibiotics showed no significant difference in the incidence of postoperative infection or implant failures.

In the study by Caiazzo *et al.* (2011), no postoperative infections were noted over follow-up of eight weeks.[28] However, the only two implant failures in the study occurred in the no antibiotic group. In the study by Tan *et al.* (2014), there was no suppuration noted in the no antibiotic group. However, that group had the one and only implant failure in the study.[29]

Table 1: Characteristics of RCTs.

Primary author	Number of subjects / implants	Intervention	Control	Additional measures	Smokers	Drawbacks
Anitua[24]	105 (52 antibiotic, 53 placebo)/105	2g amoxicillin one hour preoperatively	Placebo one hour preoperatively	Oral hygiene instructions One-minute chlorhexidine rinse preoperatively 4mg intravenous or intramuscular dexamethasone Implants were humidified in liquid plasma rich in growth factors (PRGF)	19% smokers in antibiotic group 15% smokers in placebo group	Trial supported by implant manufacturer Relatively low sample size
Abu Ta'a[27]	80 (40 antibiotic, 40 no antibiotic)/247	1g amoxicillin one hour preoperatively plus 500mg amoxicillin four times a day for two days	No antibiotics	0.12% chlorhexidine rinse for one minute preoperatively, and twice a day for one minute for 7-10 days postoperatively Perioral skin for all patients disinfected for 30 seconds using cetrimonium bromide 0.5% in water and chlorhexidine 0.05% in water	Smokers included, percentage not reported	Not placebo controlled Blinding is unclear Heavy smokers included Surgeons with different levels of experience performed surgeries
Esposito[22]	316 (158 antibiotic, 158 placebo)/696	2g amoxicillin one hour preoperatively	Placebo one hour preoperatively	OHI and debridement one week preoperatively One-minute rinse 0.2% chlorhexidine preoperatively and twice a day for seven days postoperatively	37.3% smokers in antibiotic group; 31.6% smokers in placebo group	Immediate, early and conventional loading done 136 immediate implants inserted Variation in surgical approach Multiple implant types used
Esposito[25]	506 (252 antibiotic, 254 placebo)/972	2g amoxicillin one hour preoperatively	Placebo one hour preoperatively	OHI and debridement one week preoperatively One-minute rinse 0.2% chlorhexidine preoperatively and twice a day for seven days postoperatively	32.1% smokers in antibiotic group 34.6% smokers in placebo group	Immediate, early and conventional loading done 136 immediate implants inserted Variation in surgical approach Multiple implant types used
Kashani[21]	447 (223 antibiotic, 224 no antibiotic)/963	Amoxicillin 2g one hour preoperatively or 600mg clindamycin one hour preoperatively	No antibiotics	N/A	Not reported	Not placebo controlled Randomisation and blinding unclear Variation in surgical approach Simultaneous grafting included Hygiene protocols not reported
Nolan[23]	55 (27 antibiotic, 28 placebo)/82	Amoxicillin 3g one hour preoperatively	Placebo one hour preoperatively	One-minute rinse 0.2% chlorhexidine preoperatively and 4-5 times a day for seven days postoperatively	25.9% smokers in antibiotic group 21.4% smokers in placebo group	28 of 83 initial participants excluded from the analysis Variation in surgical approach Multiple implant types used Low sample size
Caiazzo[28]	100/148	2g amoxicillin one hour preoperatively (25 participants) 2g amoxicillin one hour preoperatively and 1g twice a day for seven days postoperatively (25 participants) 1g amoxicillin twice a day for seven days postoperatively (25 participants)	No antibiotics (25 participants)	Scaling and root planing One-minute rinse 0.2% chlorhexidine preoperatively and twice a day for 15 days postoperatively	Not reported	Low sample size Not placebo controlled Subjects and assessor not blinded No allocation concealment implemented Multiple implant systems used
Tan[29]	329/329	2g amoxicillin one hour preoperatively (81 participants) 2g amoxicillin immediately postoperatively (82 participants) 2g amoxicillin one hour preoperatively and 500mg three times daily postoperatively (86 participants)	Placebo one hour preoperatively (80 participants)	Periodontal and endodontic health was established prior to surgical interventions One-minute rinse 0.2% chlorhexidine preoperatively	8.6% smokers in preoperative antibiotic group 11% smokers in postoperative-only antibiotic group 12.8% smokers in preoperative and postoperative antibiotic group 10% smokers in placebo group	Single blinded (patients not blinded)

Table 2: Findings of systematic reviews and meta-analyses.

Primary author	Year	Number of studies included	Findings
Ahmad[45]	2012	6	Antibiotic prophylaxis is not beneficial in low- and moderate-risk patients
Esposito[37]	2013	6	Prophylactic antibiotics significantly reduce early implant failures but are of no significance in reducing postoperative infections
Ata-Ali[35]	2014	4	Prophylactic antibiotics significantly reduce implant failures but are of no significance in reducing postoperative infection
Chrcanovic[36]	2014	14	Prophylactic antibiotics significantly reduce failures of dental implants but have no significant effect on the reduction of postoperative infection
Lund[34]	2015	5	Antibiotic prophylaxis for dental implants gives a reduction of 2% for the risk of failure. Sub-analysis showed no benefit of antibiotic prophylaxis in uncomplicated surgery in healthy patients
Lobos[31]	2015	11	No statistically significant difference observed regarding failure due to infection between the different antibiotic groups and the control group
Park[32]	2017	15	Antibiotic prophylaxis in healthy patients undergoing implant placement does not improve clinical outcomes
Chen[33]	2017	9	Prophylactic antibiotics significantly reduced the incidence of failure but did not significantly reduce postoperative infection
Sanchez[39]	2018	9	Single dose of preoperative prophylaxis is effective at preventing implant failure but was not significant for infections
Braun[38]	2019	8	Antibiotic prophylaxis may significantly reduce implant failures in healthy patients
Khouly[30]	2019	10	No statistically significant difference in incidence of postoperative infection between antibiotic and control group

Systematic reviews and meta-analyses (Table 2)

The latest systematic review and meta-analysis by Khouly *et al.* (2019) used the incidence of postoperative infection as the primary outcome rather than implant failure.[30] Results showed no statistically significant difference in the incidence of postoperative infection between the control group and the antibiotic group. Furthermore, no statistically significant difference was reported when the authors compared the different antibiotic regimens, which included preoperative only, preoperative and postoperative, and postoperative only, to the control group. Lobos *et al.* (2015) reported similar findings.[31]

Another systematic review did not support the routine administration of antibiotic prophylaxis to healthy patients undergoing implant surgery, as the majority of included studies showed no statistical difference in terms of prosthetic failure, implant failure or postoperative infection. The two studies that supported the use of antibiotics were assessed as having a high risk of bias.[32]

Other systematic reviews and meta-analyses showed that prophylactic antibiotics significantly reduce implant failure[33-39] but have no significant effect on the incidence of postoperative infection.[33,35-37,39] The numbers needed to treat (NNT) to prevent implant failure in one patient ranged from 25 to 67 across these studies (**Table 3**). Even though a statistically significant difference was found between the antibiotic and control groups in their meta-analysis, Braun *et al.* (2019) concluded that routine use of antibiotics is still not warranted and further evidence is needed.[38] Sanchez *et al.* (2018) concluded that a single dose of preoperative antibiotics (SDOAP) is effective at preventing implant failures (risk difference of 1.3%) but was of no significance in preventing postoperative infection.[39] They reported that the NNT to prevent one patient from developing postoperative infection using SDOAP was 100.[39] They also failed to find a significant benefit from administering postoperative antibiotics (both with preoperative or solely postoperative), which is similar to what was reported later by Romandini *et al.* (2019).[40] The advantage of the complex systematic review and meta-analysis by Lund *et al.* (2015) was that a sub-analysis of two studies that had reduced clinical heterogeneity was done, which led to the conclusion that antibiotic prophylaxis provided no benefit in uncomplicated surgery.[34]

Table 3: The number needed to treat (NNT) to prevent implant failure in one patient.

Author (year)	NNT to prevent implant failure in one patient	95% confidence interval
Braun *et al.* (2019)[38]	24	15.6-47.9
Sanchez *et al.* (2018)[39]	67	26-125
Lund *et al.* (2015)[34]	50	Not Stated
Chrcanovic *et al.* (2014)[36]	50	33-100
Ata-Ali *et al.* (2014)[35]	49	31-109
Esposito *et al.* (2013)[37]	25	14-100

Discussion

Associating antibiotics directly with implant failure can be misleading, as implant failure is a complex and multifactorial process, in which postoperative infection is one of several causes. Furthermore, a new definition of osseointegration states that "osseointegration is a foreign body reaction where interfacial bone is formed as a defence reaction to shield off the implant from

the tissues".[41] A mild response, along with mild inflammation, can be considered normal. However, overactivation of the immune system can increase osteoclastic activity, which will result in bone loss and loosening of the implant. This is usually independent of bacteria and it is reported that bacterial causes of implant loosening account for as little as 1% of operated cases.[42] More important factors identified include: smoking; genetic deficiencies; poor clinical handling; corrosion of the implant; residual cement; and, use of certain pharmaceutical products such as selective serotonin reuptake inhibitors (SSRIs) and proton pump inhibitors (PPIs).[42,43]

Chlorhexidine mouth rinse was a confounding variable in a number of the studies.[22-25,27-29] This antimicrobial agent has been shown to be efficacious against a variety of microorganisms including gram-positive and gram-negative bacteria, yeasts, and viruses.[44] In addition, it has high substantivity, which enables a prolonged effect. Thus, it is difficult to rule out the influence of chlorhexidine rinse on the results. It is important that future studies consider this and study the effects of antibiotics and chlorhexidine independently of one another.

Overall, it is very difficult to conduct a well-controlled RCT as a large sample size is needed. Most studies that had a pre-calculated sample size failed to reach their target. Furthermore, there are many confounding variables such as smoking status, number of implants placed per patient, location of implants placed, implant placement and loading protocols, which all need to be controlled for. Additionally, there is no consensus regarding which is the most appropriate antibiotic as well as the dose to be used.

It is also important to note that postoperative infections in the published literature were detected clinically as suppuration with or without pain, swelling and fever. It has been suggested that low-grade infections that are not detected clinically can account for some implant failures and so the actual occurrence of infection may be underestimated.[36]

Conclusion

Based on the best available evidence, routine antibiotic prophylaxis to prevent dental implant infections in healthy patients may not be indicated. Further large, multicentre, double-blinded RCTs are needed. The authors' advice to clinicians is to consider the local, systemic and procedural risk factors for each patient before deciding to prescribe prophylactic antibiotics.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

1. Early implant failure occurs when:

- ○ A: Osseointegration could not be maintained
- ○ B: There is a lack of osseointegration
- ○ C: All of the above
- ○ D: None of the above

2. Which of the following have been shown to increase the risk of dental implant failure:

- ○ A: Smoking
- ○ B: Selective serotonin reuptake inhibitors
- ○ C: Proton pump inhibitors
- ○ D: All of the above

3. True or false: there is sufficient evidence to support the routine use of antibiotics prior to dental implant placement in healthy patients

- ○ A: True
- ○ B: False

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CPD

Oral complications and dental management of childhood cancer: how does the dentist support integrated care?

Précis: Cancer is one of the leading causes of childhood mortality. Dentists should be aware of the orofacial complications and management of children who receive a cancer diagnosis or have a history of cancer. Complications of cancer treatment can carry life-long morbidity. Thus, this paper is relevant for all members of the dental profession.

Abstract: Childhood cancer is one of the leading causes of childhood mortality. Cancer treatment carries significant orofacial morbidity.

Objective: The reader should understand the acute and long-term implications of cancer treatment on oral health.

Background: Cancer treatment can cause acute and long-term oral complications. Many of these complications are irreversible and dental effects can be seen into the permanent dentition. The severity of dental complications is dependent on the child's age and stage of dental development at the time of cancer treatment, as well as the type and duration of cancer treatment.

Conclusion: Dental care for children with cancer is important. All dentists must have an awareness of the oral complications of oncology treatment and should be ready to provide appropriate care, including enhanced preventive care, for these patients.

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Introduction

Childhood cancer is one of the leading causes of childhood mortality. The National Health Service (NHS) reports 1,400 new cases of childhood cancer in the United Kingdom (UK) every year.[1] The incidence rate of childhood cancers in Ireland is similar to the European average.[2] Leukaemia and lymphoma account for most childhood cancers, followed by solid tumours and brain tumours. Head and neck tumours account for approximately 12% of childhood cancers.[3] Mortality rates for childhood cancers were at their highest in Ireland in the 1950s and 1960s. However, with advances in diagnostic techniques and treatments, mortality rates have decreased by 60-70%.[2] Treatment of childhood cancer can involve:

1. Radiation therapy (involves a high-energy beam of radiation to destroy cancer cells).
2. Chemotherapy (involves cytotoxic drugs, which target rapidly dividing cancer cells).

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3. Surgery.
4. Bone marrow transplantation.
5. Combination of the above.

Cancer treatment has significant orofacial morbidity.[4] Anti-neoplastic treatments lack specificity and can have adverse effects on healthy tissues.[5] In a study of paediatric oncology patients, 93% had oral complications.[6] A recently published systematic review demonstrated that children with a history of childhood cancer had double the risk of a dental defect compared to healthy subjects.[5]

Children may develop acute and long-term oral complications of cancer treatment.[7] These complications can have a profound impact on the child's quality of life.[8] All dentists should be aware of the importance of timely dental review and treatment prior to commencing cancer therapy, and should be ready to provide enhanced preventive care for these patients.

Method

A literature search was carried out to identify relevant literature via the electronic database PubMed. Relevant studies, literature reviews and case reports were considered. A hand search of reference lists was also carried out to identify further literature. Studies published in the English language were included in this narrative review.

Acute complications of cancer treatment

Management of cancer can lead to various acute oral complications:

Oral mucositis

Ulceration and painful mucositis are commonly reported acute complications of radiation therapy and chemotherapy. Mucositis is an inflammatory process caused by exposure to radiation therapy and chemotherapy agents.[9] Oral mucositis initially presents as an area of soft tissue erythema, which can progress to ulceration with a sloughy fibrous membrane.[10] Oral mucositis can have a detrimental effect on nutritional intake, oral care and quality of life.[10] Superimposed viral and fungal infections can occur on areas of oral mucositis. Infection of the ulcerated tissues may carry a risk of sepsis.

Infection

During cancer treatment, patients are immunocompromised and can be susceptible to secondary opportunistic infection, e.g., herpes simplex virus and *Candida albicans*.[7]

Pain

It has been reported that some children treated with chemotherapy may complain of mandibular neuropathic pain.[7] This may mimic dental pain symptoms.

Xerostomia

Xerostomia is also a common complication of cancer treatment. Radiation therapy can directly damage salivary tissue, with higher doses of radiation causing increased risk of salivary gland dysfunction. Chemotherapy agents may also compromise salivary flow.[9] Patients may complain of transient or permanent oral dryness. Xerostomia may aggravate painful oral mucositis and may prevent good dietary habits.[10] Saliva has a number of protective functions in the oral cavity.[9] Lack of protective saliva increases the risk of enamel demineralisation and makes these children particularly at risk of dental caries.[9]

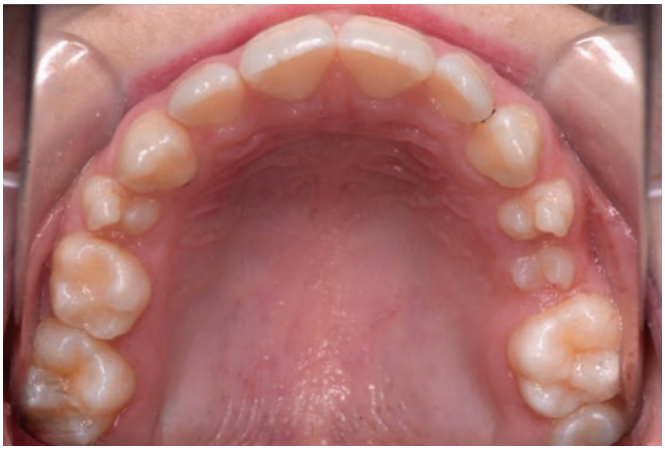

FIGURE 1: Intra-oral photograph of a 13-year-old female with a history of cancer treatment. Dental anomalies include an enamel defect on UL6 and microdontia of UR4 and UL45.

Oral petechiae

Cancer treatment may lead to thrombocytopaenia. In patients with thrombocytopaenia, oral petechiae may be seen on the buccal mucosa.[6]

Taste dysfunction

Cancer treatment may also lead to changes in taste. Taste disturbance may be due to hyposalivation, damage to cranial nerves, presence of oral infection, and other changes to the oral environment, including poor oral hygiene or changes in dietary intake.[9]

Long-term complications of cancer treatment

Treatment of cancer can also lead to long-term oral complications. Some complications are irreversible, especially in children who are growing.[11] Most dental anomalies occur when children are treated for cancer under the age of six.[12] The severity of dental complications is dependent on the child's age and stage of dental development at the time of cancer treatment, as well as the type and duration of cancer treatment.[5,7] Children who are young at the time of treatment, and those that are treated with higher doses of radiation or total body irradiation, tend to be at higher risk of developing dental complications.[5]

Enamel defects

Developing odontoblasts and ameloblasts can be affected by cancer treatment and this may lead to crown defects. Radiation therapy inhibits odontoblast mitotic activity and develops osteodentine, which prevents enamel mineralisation.[13] One study compared the dental health of children with a history of childhood cancer to the dental health of their siblings.[4] The prevalence of enamel defects was higher in children with a history of cancer. Reported prevalence of enamel defects among groups of children with a history of cancer range from 36%[14] to 69.8% (**Figure 1**).[15]

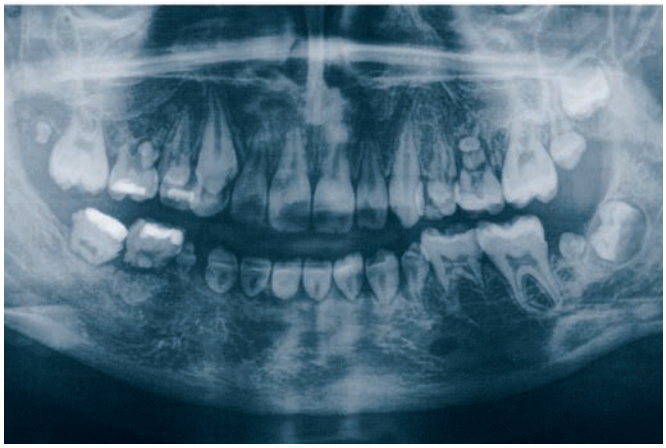

FIGURE 2: Orthopantomograph of a 13-year-old female with a history of cancer treatment. Dental anomalies include arrested root development, v-shaped roots, microdontia, hypodontia, atypical restorations, and enamel defects.

Hypodontia/microdontia

These dental anomalies often present as late complications of cancer treatment.[16] One study assessed the dental health of a group of children with past malignant disease.[14] Some 19% of these children had hypodontia. A systematic review reported an increased risk of tooth agenesis by 147% (RR 2.47) in children who have been treated with chemotherapy.[17] Microdontia has been shown to be the most common crown defect (**Figure 1**).[5]

Root disturbances

Apical blunting and change in shape and length of roots are complications of cancer treatment.[15] Root defects are reportedly more common than crown defects.[5] A Swedish study assessed the radiographic dental changes in children who were treated with radiation therapy and chemotherapy.[11] Short, v-shaped roots were seen in 94% of children treated with radiation therapy and chemotherapy (**Figure 2**).

Dental caries

Children with cancer have been shown to have more teeth with dental caries.[4] One cross-sectional study assessed the prevalence of dental caries among a group of childhood cancer survivors compared to age and sex-matched controls.[18] This study reported a significantly higher prevalence of primary teeth with active caries in the cancer group. They also reported a higher decayed, missing, filled (DMF) score among cancer survivors compared to the control group. A large-scale Danish study reported a higher prevalence of dental caries in children who were diagnosed with cancer at age five to six years.[19] This increased prevalence of dental caries reduced over time and appeared to be diminished at age 15 years.

Duggal *et al.* reported a higher prevalence of untreated dental caries in a group of childhood cancer survivors compared to their siblings.[4] The main reasons for increased caries rate may include:

1. Type of cancer treatment
   Children who are treated with radiotherapy have been shown to have higher DMF scores.[18] Radiotherapy can alter salivary gland secretion and lead to production of acidic saliva.[13] Chemotherapeutic agents may also affect saliva secretion, although the evidence is conflicting.[13,20]
2. Saliva
   Saliva acts as a buffer to counteract the acidic environment created by oral bacteria.[21] Saliva also plays a role in oral clearance. Disruption to saliva flow favours a cariogenic environment.
3. Medications
   Children with a history of cancer are likely to be taking oral medications to maintain remission or for the treatment of confounding disease.[21] In children, solutions are flavoured to improve compliance. It is important to realise that these solutions may be sugar based. Medication-related xerostomia may also promote a more acidic oral pH, which also is conducive to caries.[22]
4. Diet
   Xerostomia may lead to children requesting 'mouth-moistening' drinks to improve oral comfort.[15] These drinks are often flavoured and sugar based.
5. Associated socioeconomic factors
   Parental education and frequency of dental attendance are also related to caries risk.[18] Families of children with cancer may not understand the significance of oral health and may not prioritise dental visits due to other medical commitments.

Gingival health

There is conflicting evidence on the quality of gingival health among children with cancer compared to controls. One study reported no differences between the gingival index and plaque index of children with cancer and controls.[23] Another study showed that the prevalence of gingivitis increased during treatment phases and with treatment with methotrexate in children with acute lymphoblastic leukaemia.[24] This may not be directly related to the anti-neoplastic treatments.[17] During treatment phases some children may be reluctant to brush teeth in view of mucositis and thrombocytopaenia, which carries a bleeding risk. In this case, it is important to instruct patients to maintain good oral hygiene. Soft toothbrushes and sponges may be helpful during treatment phases.

Tooth discolouration

Certain chemotherapeutic agents have been shown to cause intrinsic tooth discolouration, e.g., vincristine, vinblastine.[17]

Malocclusion/jaw asymmetry

The developing oral structures are sensitive to radiation. Developing facial bones may be affected by radiation, leading to asymmetry and occlusal disturbances.[7,11]

TMJ and muscle dysfunction

Radiation therapy can lead to trismus and muscular pain.[9]

Salivary gland dysfunction

Salivary glands may also be in the beam of radiation treatment. Altered function can lead to reduced saliva and complications including dental caries and opportunistic infections.

Oral graft vs host disease

This condition is a complication of bone marrow transplantation. It leads to multi-system symptoms including fever, rash, diarrhoea, intra-oral white patches, erythema, ulceration and trismus.[9]

Dental management of children with cancer

Some side effects of childhood cancer are unavoidable. Many of these side effects can have a profound impact on the child's oral health. Dental caries and gingival disease are preventable. Dentists play a key role in sharing the importance of good oral health and preventive measures to improve these children's quality of life.

The Royal College of Surgeons published a guideline in 2018, which is a useful resource for dentists in the management of oncology patients.[16] Although not strictly based on the treatment of paediatric patients, the guideline provides an excellent summary of optimal dental care of all oncology patients. The authors recommend that readers refer to these guidelines for more information.

Prior to cancer treatment

A comprehensive oral examination is recommended prior to commencing cancer treatment. The pre-treatment assessment involves identification of existing disease, classification of future disease risk, and removal of possible sources of infection. This is usually carried out by a specialist in paediatric dentistry.

This process allows the dentist to discuss future dental implications of cancer treatment and allows the development of a tailored prevention plan. The general dental practitioner (GDP) has a role in education of the family and provision of enhanced preventive care.

During cancer treatment

The GDP also has an important role during the treatment stages of childhood cancer. The dentist should reinforce the importance of good oral hygiene, offer dietary advice, and should be able to give advice about how to manage oral discomfort from mucositis and ulceration. The primary symptom of oral mucositis is pain. Management of oral mucositis is symptom relief via saline mouth rinses, ice chips and topical local anaesthetic agents.[10] Fluoride application is also recommended. Elective dental treatment should be avoided.[16] Nutritional support and monitoring of dietary intake is essential. Support from a dietician or the patient's general medical practitioner is advisable.

Following cancer treatment

The GDP should maintain regular follow-up care for these patients. Each follow-up appointment should include an emphasis on oral hygiene and fluoride use. Limited mouth opening following radiation therapy may make dental treatment challenging.[16] Regular jaw exercises may improve access. Dental extractions should be avoided where possible. Should the GDP need to arrange dental treatment for these children, advice from a specialist in paediatric dentistry may be required.

Orthodontics

When children have a diagnosis of cancer, orthodontic treatment is usually discontinued. Authors have recommended that fixed appliances should be removed.[16] Xerostomia and oral ulceration may cause oral discomfort and fixed appliances can exacerbate this. Attendance and compliance with dental appointments can be affected. An increased risk of poor gingival health may also compromise oral hygiene around fixed appliances.[16] There is also a risk that developmental root disturbances may increase susceptibility to root resorption. For this reason, it is recommended that orthodontic treatment should be postponed until two years following completion of cancer therapy.[25] Following radiation therapy and antiresorptive therapy, dentists should also consider the risk of osteonecrosis if orthodontic extractions are indicated.[16]

Following childhood cancer, a decision to commence orthodontic treatment requires careful consideration. As for all orthodontic patients, they should be informed of the risks of orthodontic treatment. Long-term complications of childhood cancer can impact on orthodontic treatment. Pre-treatment radiographs should be taken to assess root morphology. Modification of the orthodontic treatment plan should be considered and treatment duration may vary depending on the child's medical background.[26]

Discussion

Although childhood cancer is uncommon, it is a significant cause of childhood mortality. Head and neck tumours are also uncommon. However, unusual swellings, bone pain, systemic illness, and tooth mobility or displacement should warrant further investigation.[27]

The GDP plays an important role in improving the quality of life for children with cancer. The GDP should play an active role in vigilant identification of oral complications of childhood cancer treatment. Caries and gingival disease are preventable; the GDP should be able to reinforce preventive care and advice for these patients. The GDP should be able to recognise and acknowledge the risk of acute and long-term complications of cancer treatment.

Many of the published studies on childhood cancer survivors are retrospective and cross-sectional in design. Some studies are limited by selection bias as there are no control groups and they are from single centres.[5] Many of the reported dental defects are not validated, and indices are not used to classify severity.[5] The aetiology of oral complications is also multifactorial, and lack of recognition of confounding factors is a flaw in many studies. It is also difficult to compare the effect of chemotherapeutic agents as many treatments have different dosing regimens and protocols, which makes comparison between studies challenging. Future research within this patient group is required.

Conclusion

Improved survival rates for children with cancer mean that more children are living long into adulthood.[4] This means that dentists are likely to meet children who are about to start or have completed cancer treatment.[16] All dentists must have an awareness of the oral complications of oncology treatment, and should be ready to recognise risk and provide enhanced preventive care for these patients.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

IDA irish dental association

CPD

1. What is the most common form of childhood cancer?

- ○ A: Leukaemia
- ○ B: Neuroblastoma
- ○ C: Osteosarcoma

2. Oral mucositis is a commonly reported complication of:

- ○ A: Radiation therapy
- ○ B: Chemotherapy
- ○ C: Both radiation therapy and chemotherapy

3. When do GDPs play a role in treating a child with a background of childhood cancer?

- ○ A: Before treatment
- ○ B: After treatment
- ○ C: At all stages of treatment

Antibody epitopes in vaccine-induced immune thrombotic thrombocytopenia

Huynh, A., Kelton, J.G., Arnold, D.M., Daka, M., Nazy, I.

Vaccine-induced immune thrombotic thrombocytopaenia (VITT) is a rare adverse effect of Covid-19 adenoviral vector vaccines. VITT resembles heparin-induced thrombocytopaenia (HIT) as it is associated with platelet-activating antibodies against platelet factor 4 (PF4); however, patients with VITT develop thrombocytopaenia and thrombosis without heparin exposure. The objective of this study was to determine the binding site on PF4 of antibodies from patients with VITT. Using alanine scanning mutagenesis, we determined that the binding of VITT anti-PF4 antibodies (n = 5) was restricted to eight surface amino acids, all of which were located within the heparin binding site on PF4, and the binding was inhibited by heparin. In contrast, HIT samples (n = 10) bound to amino acids corresponding to two different sites on PF4. Using biolayer interferometry, we demonstrated that VITT anti-PF4 antibodies had a stronger binding response against PF4 and PF4/heparin complexes than HIT antibodies, albeit with similar dissociation rates. Our data indicates that VITT antibodies can mimic the effect of heparin by binding to a similar site on PF4, allowing PF4 tetramers to cluster and form immune complexes, which in turn cause Fc RIIa-dependent platelet activation. These results provide an explanation for VITT antibody-induced platelet activation that could contribute to thrombosis.

Nature 2021 Jul 7. doi: 10.1038/s41586-021-03744-4. Epub ahead of print. PMID: 34233346.

Clinical performance of posterior inlay-retained and wing-retained monolithic zirconia resin-bonded fixed partial dentures: stage one results of a randomized controlled trial

Bömicke, W., Rathmann, F., Pilz, M., Bermejo, J.L., Waldecker, M., Ohlmann, B., et al.

Purpose: To prospectively compare the clinical performance of posterior inlay-retained and wing-retained monolithic zirconia fixed partial dentures (FPDs).

Materials and methods: After simple randomisation, 30 participants received either one inlay-retained (n = 15; mean age: 56.38 ± 12.70 years; 10 men [66.7%]) or one wing-retained (n = 15; mean age: 45.90 ± 13.24 years; 7 men [46.7%]) FPD. The restorations, which predominantly replaced first molars, were fabricated from translucent, 3mol% yttria-stabilised zirconia and attached with self-etching resin cement. Restorations and abutment teeth were clinically followed up for complications one week and three, six, and 12 months after cementation. Plaque and gingival scores, probing pocket depths, and attachment levels were recorded for the abutment and contralateral reference teeth both before treatment and during follow-up examinations. The restorations were also assessed in accordance with FDI World Dental Federation criteria. Statistical analyses were conducted with R ($\alpha = 0.05$). An adaptive, two-stage study design based on the incidence of failure-free survival in the groups after 12 months (stage 1) was implemented. Predefined decision rules were used to determine whether further recruitment (stage 2) would enable the detection of a statistically significant difference between the restoration designs with sufficient power.

Results: During 12 months, only one wing retainer debonded, which required removal of the FPD. Failure-free survival was thus 93.3% for wing-retained and 100% for inlay-retained FPDs (log-rank test, p = 0.317). Moderate after care resulted in intervention-free rates of 78.8% and 86.7% for inlay-retained and wing-retained restorations, respectively (log-rank test, p = 0.605). Based on FDI World Dental Federation criteria, all restorations were acceptable at 12-month follow-up (Fisher-Boschloo test, p = 0.161). Plaque, gingival, and periodontal scores remained practically unchanged from before treatment to the 12-month follow-up. Recruitment was stopped after stage 1 because, based on the small difference in the incidence of failure-free survival in the groups, it was accepted that it would not be possible to recruit the necessary number of participants to show a statistically significant difference between the retainer designs.

Conclusions: Both inlay-retained and wing-retained monolithic zirconia

resin-bonded FPDs performed well for the 12-month, short-term follow-up period.

Journal of Prosthodontics 2021; 30 (5): 384-393.

Immune evasion of SARS-CoV-2 emerging variants: what have we learnt so far?

Lazarevic, I., Pravica, V., Miljanovic, D., Cupic, M.

Despite the slow evolutionary rate of SARS-CoV-2 relative to other RNA viruses, its massive and rapid transmission during the Covid-19 pandemic has enabled it to acquire significant genetic diversity since it first entered the human population. This led to the emergence of numerous variants, some of them recently being labelled "variants of concern" (VOC), due to their potential impact on transmission, morbidity/mortality, and the evasion of neutralisation by antibodies elicited by infection, vaccination, or therapeutic application. The potential to evade neutralisation is the result of diversity of the target epitopes generated by the accumulation of mutations in the spike protein. While three globally recognised VOCs (Alpha or B.1.1.7, Beta or B.1.351, and Gamma or P.1) remain sensitive to neutralisation, albeit at reduced levels, by the sera of convalescent individuals and recipients of several anti-Covid-19 vaccines, the effect of spike variability is much more evident on the neutralisation capacity of monoclonal antibodies. The newly recognised VOC Delta or lineage B.1.617.2, as well as locally accepted VOCs (Epsilon or B.1.427/29-US and B1.1.7 with the E484K-UK) are indicating the necessity of close monitoring of new variants on a global level. The VOCs' characteristics, their mutational patterns, and the role mutations play in immune evasion are summarised in this review.

Viruses 2021; 13 (7): 1192.

Multidisciplinary management of permanent first molar extractions

Sabri, R.

The first molar has been reported to be the most caries-prone tooth in the permanent dentition. Orthodontists are treating more adult patients who are more likely to have missing and severely decayed first molars. This article will show the various orthodontic and restorative options for first molars that are already extracted or have to be extracted. The following clinical situations will be addressed: molar uprighting and its advantages for the future restoration vs orthodontic space closure; strategic extraction of salvable first molars; impacted molars; and, early extraction of compromised permanent first molars in young children.

American Journal of Orthodontics and Dentofacial Orthopedics 2021; 159: 682-692.

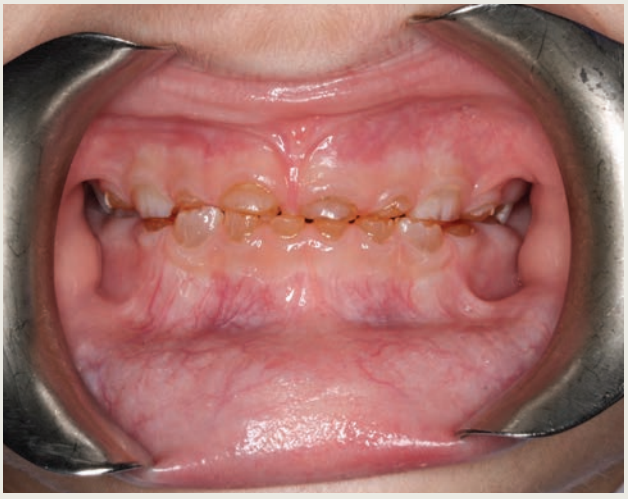
Quiz answers

Questions on page 180

1. Dentinogenesis imperfecta (DI). This condition is hereditary, predominantly autosomal dominant, and can be categorised into three types. It mainly affects the primary dentition. Enamel is normal and can appear opalescent (blue-grey); however, it is lost quickly due to the weak enamel-dentine junction.

2. Osteogenesis imperfecta is implicated in DI type I and therefore paediatricians should be involved in patient care.

3. Aside from severe tooth wear, patients are prone to spontaneous dental abscesses. Bacteria can easily invade the interglobular spaces caused by a poorly formed matrix. Parents should be warned of this as early as possible in order to make informed decisions when it comes to treatment planning. This becomes more important when general anaesthetic is the treatment option of choice.



4. Diagnosis is key. Early diagnosis means that preventive strategies and acclimatisation can be introduced, especially as dental problems can occur at such a young age. Stabilising teeth and occlusal height are important, and pre-formed metal crowns (Hall technique) prove useful in these situations. Aesthetics can be addressed if the child is co-operative. Extraction of severely worn or abscessed teeth may also be required. Referral to a specialist is often needed.

SITUATIONS WANTED

Associate dentist seeking position in Cork from August/September. Part-time/full-time positions considered. Please email details to associategdp@gmail.com.

SITUATIONS VACANT

Associates

Associate dentist required to replace departing colleague in south Dublin. Well-established, fully digital practice with excellent support staff and hygienist. CVs to info@walkinstowndentalcare.com.

Associate dentist wanted to join busy dental practice. Modern equipment and friendly team in Cavan Town. Apply with CV to churchstdental@gmail.com.

Greater Dublin area. Experienced, full-time associate for a very busy practice. Supportive, progressive environment. Excellently equipped. Superb support staff. Endo/oral surgery experience helpful. Good long-term prospects for suitable candidate Own transport a necessity. Contact niall@innovativedental.com.

Associate position available for experienced dentist, part-time with view to full-time. Well-established, fully digital practice in Cavan Town. Excellent, friendly support staff with hygienist and visiting periodontist. Please email CV to info@mcgarritydental.ie.

Join the Dentalhouse group. Associates, full and part-time, required to join general and limited practice clinics (with orthodontics, prosthodontics, implantology and periodontics) in Maynooth, Castleknock and Dublin 2. Interest in cosmetic dentistry and restoration ideal. Contact john@dentalhouse.ie.

Associate dental position available in Cork. Initially for one to two days per week with a view to increase. Busy practice, computerised, fully equipped. iTero scanner, digital x-rays. Very good support staff and resident hygienists. Please email carrigalinedentalpractice@gmail.com.

Cork City multi-surgery practice looking for experienced associate with a view. Hours negotiable. Contact corkcityassociate@gmail.com.

Skibbereen/West Cork. Full-time associate required to replace departing colleague in busy general practice. Computerised, digital x-rays, modern surgery. Full book. Call 086-172 7064, or email skibbereendental@gmail.com.

Experienced dental associate required part-time for busy practice in Co. Limerick. Private/PRSI/Medical Card patients. 50% renumeration. Email CV to limerickcountydental@outlook.com.

Galway. Private/PRSI only, fully computerised practice. Associate position available one day per week currently. Please email CV to galwayassociateposition@gmail.com.

Galway. Dental associate required full-time and part-time to replace departing colleague. Modern practice, private/PRSI, full book, fully digital, OPG, excellent support staff, endodontist, hygienist. New grads welcome. 30 minutes from Galway City. Contact drrothwelldental@gmail.com.

Associate dentist required to join our busy, award-winning team. Excellent support staff, CBCT/OPG, Itero intra-oral scanner, fully private. Generous remuneration. Contact info@gracefielddental.ie.

Associate required for busy, mixed work, friendly, modern practice for two days immediately and three to four days from end of July to cover maternity leave. Will be three days after maternity cover finished. Contact Matt at fermoydental89@gmail.com.

Part-time experienced dental associate required for busy modern practice. Skilled and friendly support staff. Very supportive working environment. Contact nikki@3dental.ie.

Churchtown, Dublin: associate dentist required part-time/full-time. Contact dublindentist@gmail.com.

Ayrfield Medical Park, Kilkenny city. Full/part-time associate position, full day book. Contact ayrfielddentalpractice@gmail.com.

Associate required for busy dental practice in Tullamore, Co. Offaly, to replace departing colleague. Minimum of two years' experience required. Contact associatetullamore2021@gmail.com.

Part-time associate position available, Glanmire, Cork, for summer months, Mondays/Tuesdays. Full book, excellent support staff. Contact cmgdental@gmail.com.

Industry-leading group of practices seeks to recruit qualified associate dentist to join an ever-growing, caring and innovative dental team. Immediate start required. Private/PRSI patients. Contact enquiries@boynedental.ie.

Amazing opportunity for two associate positions in Letterkenny. Part-time and full-time available. Exact, Digital X-rays, rotary endo, iTero scanner, IV sedation, great staff. Full clinical support available if required so would be suitable for new graduate. Contact chris@qtdentalcare.com.

Full time associate required to replace emigrating colleague in our Ferbane clinic. This is a modern, friendly practice with excellent support staff. Excellent equipment supplied, full Cerec, OPG, etc. Contact deirdre@thejamesclinic.com.

Experienced dental associate required to work two days/week in general practice in Malahide, Co. Dublin. Private/PRSI. Please email CV to dentistpostmalahide@gmail.com.

Limerick – we are looking for a talented, experienced associate to join our team. Fully private, high-end practice with excellent equipment, facilities and staff. Full book. Four to five days ideally. Generous terms for the right candidate. Contact limerickdentaljob@gmail.com.

Advertisements will only be accepted in writing via fax (01-295 0092), letter or email (liz@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than **Friday, September 17, 2021**. Classified ads placed in the *Journal* are also published on our website www.dentist.ie for 12 weeks. **Please note that all adverts are subject to VAT at appropriate rate.**

Advert size	Members	Non-members
up to 25 words	€80	€160
26 to 40 words	€95	€190

The maximum number of words for classified ads is 40.

If the advert exceeds 40 words, then please contact:

Think Media, The Malthouse, 537 North Circular Road, Dublin 1.

Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

Please note that all classified adverts MUST come under one of the following headings:

- Situations Wanted
- Situations Vacant
- Practices for Sale/To Let
- Practices Wanted
- Equipment for Sale/To Let

Classified adverts must not be of a commercial nature. Commercial adverts can be arranged by contacting Paul O'Grady at Think Media.

Associate wanted full or part time for multi-surgery practice in south Co. Wicklow to replace departing colleague. Full book, private and PRSI only. Contact Positionavailable2020@yahoo.com.

Full-time associate required for busy, long-established practice in New Ross. Private/PRSI only. Full book. Four surgeries, established hygiene, friendly experienced staff. Full support and mentoring if needed. Apply with CV to info@rogersdental.ie.

Dublin south/centre. Full-time associate, suitable for new graduate, busy practice. Superb support staff, progressive modern environment Well equipped. Endo experience very beneficial. Flexibility crucial. July/August start. Good remuneration. Contact niall@innovativedental.com.

Position available for suitably experienced associate with a broad scope of practicing skills to join friendly, long-established patient-centred practice in Rathfarnham. Keen interest in continuing education important. High earning potential. Reply with resumé and references. Contact dentistrathfarnhamdental@gmail.com.

Associate required two days a week in busy north Dublin practice. Must be IDC registered and indemnified. Good earning potential. Contact 1989dentalsurgeon@gmail.com.

A great opportunity now available for an associate to join our relaxed and friendly team in Galway to replace departing colleague. Full book, private, digital, modern, high earning potential and no weekends! Contact drrothwelldental@gmail.com.

Associate required four to five days per week in our Naas and Newbridge practices. CBCT, Cerec, microscope, sedation (IV and RA), fully digitised. Good support staff. Reply with CV to james@theclinicnaas.ie.

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Associate required for very busy practice in Cavan Town. One hour from Dublin. Full book available replacing departing colleague. Four-surgery, modern practice, immediate start. Very supportive working environment. Well above average remuneration. Contact frances@railwaydentalsurgery.com.

Associate required for very busy family friendly practice in Fermoy four to five days per week. August start. Excellent remuneration, 50% gross, experienced support staff. New graduates welcome. Contact Matt at ballinvoher96@gmail.com.

Associate required for practice in the south east, three to four days per week. Mixed practice with private/PRSI and medical card patients. Contact pfintwo@eircom.net.

Dr Paul O'Boyle seeks enthusiastic associate dentist for part-time position at Riverside Dental Practice, Celbridge. Modern, busy, full range of private treatment, computerised, air conditioned, experienced friendly staff. Contact poboyleriverside@hotmail.com.

Associate required for well-established, friendly, modern practice close to Galway City. Excellent support staff and mentoring principal. New graduates welcome. Excellent opportunity for a well-motivated and caring dentist. Apply to dentistjob1galway@gmail.com.

Committed, enthusiastic associate wanted for a long-established mixed practice in the midlands. Very supportive work environment, EXACT software, full-time. Must be IDC registered. Contact midlandsdentalsurgery2020@gmail.com.

Associate dentist wanted to join busy dental practice in Cavan town. Apply by CV to churchstdental@gmail.com.

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Enthusiastic, self-motivated and experienced dentists required for Dublin 1 and 8 areas, full/part-time. Also looking for experienced orthodontist full/part-time. We have a waiting list so full book. Email diamondsmilejobs@gmail.com.

Dentist position available for June/July 2021. Gorey, Co.Wexford. One to two days per week. Self-employed status. Full support staff. Mixed general practice. No late nights or weekends. Email adecdental365@gmail.com.

Vacancy for a professional, experienced implant surgeon and a general practice dentist to work in dynamic and friendly Hungarian dental clinic. Contact hundental.dentalsurgery@gmail.com.

Cork – Smiles Dental is looking for a passionate dentist to join our relocated, state-of-the-art, well-established, fully private practice in Cork. Position offers five days per week, established patient book, estimated earnings upwards of €100,000 plus up-front bonus. Contact joanne.bonfield@smiles.co.uk.

Drogheda – Smiles Dental is looking for a passionate dentist to join our well-established, fully private practice in Drogheda, Co. Louth. Position offers five days per week, established patient book, estimated earnings upwards of €120,000 plus up-front bonus. Contact joanne.bonfield@smiles.co.uk.

Kiwi Dental is looking for an easy-going dentist who enjoys a laugh as much as the job they do, where you will work in a family environment where team is key. Brand new surgery. Give us a shout. Contact caroline@kiwidental.ie.

Dublin – opportunity for an enthusiastic part-time/full-time dentist to join our fully private practice in Dublin 3. Modern equipment, fully digital, friendly staff. Endodontist and implantologist in house, OPG/CBCT. Contact cddublin@mail.com.

Part-time position (one or two days per week) available for a general dentist in central Wexford Town. Very busy practice, well located, and futuristic approach to dentistry. Please send your CV to Owldental11@gmail.com.

Full-time dentist required for modern, computerised, friendly and expanding practice. Guaranteed minimum €130k salary with higher earning potential. Own nurse, surgery and any equipment required will be supplied. Excellent support staff. Please email your CV to northdublindentalclinic@gmail.com.

Dentist required for busy, fully private practice in north Dublin. The practice, which is fully digitised, is co-located with two GP practices in a state-of-the-art medical centre. Excellent remuneration and support staff. Contact careers@smilehub.ie.

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CLASSIFIEDS

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Maternity cover from October 1, with view to permanent part-time position afterwards. Private practice in south Dublin with lovely patients and team. Contact: dentistdublin10@gmail.com.

Part-time dentist required to work Fridays and Saturdays in our modern clinic in Dental Options Clane, with excellent support staff. Full Invisalign training and ongoing training provided if necessary. Contact louise@clearbraces.ie.

A part-time dentist is required to join our team at kbm Dental. Sessions negotiable. Role will involve composite bonding and facial aesthetics. Contact siobhan.kbmdental@gmail.com.

Dentist required for a busy, long-established, family-run midlands practice. Multi-chair practice, great support. Mainly private and PRSI patients, excellent remuneration. Experience essential. Email dentalassociatemidlands1@gmail.com.

Dublin City Centre, south side. Full-time busy position available. Excellent location, private practice. Good support staff. Supportive, progressive environment. Modern equipment. Very good long-term, stable prospects for suitable candidate. Contact niall@innovativedental.com.

Dentist required for busy fully private practice in north Dublin. Full and part-time hours available. The practice is fully digitised and is located in a state-of-the-art medical centre. Excellent remuneration and support staff. Contact careers@smilehub.ie.

Smiles Dental is looking for passionate dentists to join our private, well-established, state-of-the-art practices across Ireland in Enniscorthy, Cork, Athlone, Drogheda, Dun Laoghaire and Dublin. Positions offers up to five days per week, established lists, great earning potential. Contact joanne.bonfield@smiles.co.uk.

Dentist required to taken over full book in a friendly, enjoyable private practice. Would you like to be part of a practice that is about the nice things in dentistry? Then we would love to hear from you. Contact office@centraldentalclinic.ie.

Full-time position available in Co. Galway. Modern surgery. Experienced nurses. Immediate start. Experience a help but not essential. Contact Seaportdental@hotmail.com.

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Dental Care Ireland has exciting, high-earning opportunities. Multiple locations – Dublin, Kilkenny, Cavan, West of Ireland. Join our modern, friendly practices, which have busy, established books. Supported by skilled experienced teams, flexible options. Email careers@dentalcareireland.ie.

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Dentist wanted to join busy dental practice, two to three days a week, experience required. Apply by sending CV to dublinstreetdental@gmail.com.

Galway. Part-time/full-time dentist required for busy modern practice in Ballinasloe. Private/PRSI, well-established book, fully digital, OPG, experienced support staff, hygienist, endodontist. Excellent remuneration. New graduates welcome. Contact drrothwelldental@gmail.com.

Part-time dentist required for busy growing practice in north Dublin. Private/PRSI. State-of-the-art equipment. Great earning potential. Contact careers@smilehub.ie.

Dentist required for a busy multi-surgery Killarney town centre practice. Fully computerised, digital X-rays, OPG, member of Clearbraces.ie group. Three to four days a week starting September/October 2021. To apply or for further information email info@gleesondental.ie.

Busy practice in the southeast looking for third dentist. Extremely busy, modern, bright surgery, fantastic support staff. Full-time/part-time, experience preferred but new graduate considered. Possibly the funniest place you will ever work. Contact cazzakeogh@gmail.com.

Dentist required part time (two to four days/week) for busy, friendly practice in the sunny south-east. Modern facilities, fully digitalised with excellent support staff. Please reply with CV to cusackdental@gmail.com.

Part-time/full-time dentist required in Cavan Town practice. Immediate start possible. To apply please email info@ndentalclinic.com. New graduate welcome.

New graduates – Smiles Dental is looking for new graduate dentists to join our private, well-established, state-of-the-art practices in Dublin, Enniscorthy, Cork, Athlone and Limerick. Positions offer up to five days per week, established lists, great earning potential. Contact joanne.bonfield@smiles.co.uk.

Kilkenny, part-time, Saturdays. General dentist required in a busy city centre private practice, part of an expanding dental practice group. Full day list. Excellent support staff and motivated team. CVs to Dr Paul McEvoy, Clinical Director, at paulmcevoycd@dentistry.ie.

Dublin. Full/part-time general dentists required for fully private, friendly, relaxed, computerised practice. Guaranteed minimum €150k salary with much higher earning potential. Own nurse, surgery, flexible hours and any equipment required. New graduates welcome! Contact northdublindentalclinic@gmail.com.

New graduates. Fully private practice in Dublin 13 looking for dentists to join our team in a well-established, state-of-the-art clinic. Support and mentoring provided. Full and part-time positions, established lists, great earning potential. Contact northdublindentalassociate@gmail.com.

Part-time position available in south Dublin practice. Fully computerised, with friendly supporting staff. High earning potential. Contact squaredentalpractice@gmail.com.

Independent, established, fully computerised practice, digital X-rays/OPG and good remuneration. Two years+ experience for part-time/full-time position, in a relaxed, bright and spacious environment. Friendly atmosphere, with excellent staff and two hygienists. Contact castlemilldental@gmail.com.

Full-time position for a general dentist. Excellent clinic, fully computerised, good support staff. Critical skills permit considered. Immediate start. Contact jobs@alexandradental.ie.

General dentist required three to four days per week with the possibility to grow into more days in a very busy dental practice in central Wexford Town. Please send your CV to Owldental11@gmail.com.

Dentist required for Carndonagh, Co. Donegal. Full- or part-time available. Accommodation arranged. Private, PRSI and medical card. Full book. Contact donegaldental@yahoo.ie.

Dentist required to replace departing colleague in Co. Meath. Private and PRSI. Immediate start, flexi sessions to full time. CVs to dunboyneorthodontics@gmail.com.

Navan, Co. Meath. Experienced dentist to replace departing dental associate Mondays, Wednesdays + alternate Saturdays. Very busy, modern, three-surgery general practice. Private/PRSI only. Periodontist, hygienists, implants, Exact software. Excellent support staff. Start August. Email gh@bridgeviewdental.ie.

Dublin – Smiles Dental is looking for a passionate dentist to join our state-of-the-art, well-established, fully private practice in Clonshaugh, Dublin 17. Position offers five days per week, established patient book, excellent earning potential, plus €8,000 up-front bonus. Contact joanne.bonfield@smiles.co.uk.

Drogheda – Smiles Dental is looking for a passionate dentist to join our well-established, fully private practice in Drogheda, Co. Louth. Position offers five days per week, established patient book, excellent earning potential, plus €8,000 up-front bonus. Contact joanne.bonfield@smiles.co.uk.

Full and part-time dentist required for a modern, computerised friendly practice. Full book guaranteed. Earnings between 12,000 and 18,000. Please send CV to annedental@hotmail.co.uk or contact 086-398 8981.

Exciting opportunity for a graduate general dentist to join a multidisciplinary team of specialists within our growing private dental clinics in Limerick and Roscrea. Contact jobs@shieldsdentalclinic.ie.

Locums

Locum required for summer months for an immediate start. Private, fully digital, excellent support staff, visiting endodontist, hygienist, no weekends. Ballinasloe, Co. Galway. Contact drrothwelldental@gmail.com.

Locum dentist required in busy private practice in south Dublin, June 21. Minimum three years' experience. Interested candidates please apply via email at sandyfordhall.dentist@gmail.com or contact Aisling, Practice Manager, on 01-294 5122.

Locum dentist Dublin – Smiles Dental is looking for a locum dentist to join our well-established, state-of-the-art practice in South Anne St, Dublin. Position offers great earning potential, up to five days per week, experienced support teams. Contact joanne.bonfield@smiles.co.uk.

Locum dentist needed for July and August, three to four days per week. Starting ASAP to cover early maternity leave. Fully digital practice, OPG, exact software. Contact Kingscourtdentalpractice@gmail.com.

Specialists/limited practice

We require an orthodontist to join our team at Swords Orthodontics in north Co. Dublin. We are a fully digital and busy practice. One day a week initially with a view to more hours in the future. Contact brenda@swordsortho.com.

Our busy Donaghmede, Dublin, practice is recruiting an orthodontist in our primary care setting. The successful candidate will provide consultation, diagnostic and treatment services to our patients. Apply today! Contact recruitment@smartdentalcare.co.uk.

Exciting opportunity for an orthodontist to join our team for two Fridays per month, working with five general dentists, three hygienists, and visiting oral surgeon, periodontist and endodontist. Fixed and removable ortho, including Invisalign. Contact helen@portobellodental.com.

Periodontist wanted. Kingdom Clinic, Killarney, Co. Kerry. Part-time position to join existing full-time periodontist. Busy list. On site CBCT, Fotona Laser, sedation, X-Guide Implant Navigation system. Call 064-776 3010 or email tomas.allen@kingdomclinic.ie.

Oral surgeon part-time position available in a modern, thriving, progressive surgery. City centre vibrant location. Well-established patient list. Fully private practice. Contact Mariabyrnejf@gmail.com.

Periodontist required for a state-of-the-art practice with a full digital workflow in Dublin. Existing waiting list of patients requiring periodontal treatment and implants as part of our multidisciplinary team, working alongside a team of specialists. Contact hrmanager@ncdental.ie.

Orthodontist/orthodontic therapist. Colm Smith Dental, Cootehill, Monaghan, require an orthodontist/orthodontic therapist to join our existing orthodontist. Multidisciplinary team, visiting specialist oral surgeon, consultant orthodontist, in-house endodontist, excellent nursing/support staff. Accommodation available. Contact drcolmsmith@gmail.com.

South east – easy commute to Dublin. Oral surgeon/perio implant dentist required, part time. Very busy clinic, undergoing expansion programme. Strong social media presence. Flexible hours. Fully digitalised. Top-class equipment/experienced support staff. Excellent remuneration. Contact niall@innovativedental.com/

Endodontist required for a modern, state-of-the-art practice in Dublin. Full digital workflow and an endodontic microscope. Existing waiting list of patients requiring endodontic treatment as part of our multidisciplinary team, working alongside a team of specialists. Contact hrmanager@ncdental.ie.

Orthodontist wanted to join established orthodontic practice, mainly Ballina clinic with potential days at Sligo clinic. Modern and comfortable surgery with a friendly professional team. Patient waiting list, excellent earning potential. Please email CV to jenny.westcoastortho@gmail.com.

Orthodontist required full time for fully private modern clinic in Clane, Co. Kildare. Located 40 minutes from Dublin City. Experienced support staff. Full Invisalign training provided if necessary. Contact louise@clearbraces.ie.

Orthodontist positions available at Dublin Orthodontics. State-of-the-art facilities with iTero and Trios scanners. Support from a team of experienced specialists, orthodontic therapists and support team. Excellent remuneration. Flexible working hours that will suit your lifestyle. Contact elaine.hand@dublinorthodontics.ie.

Endodontist required, part-time, very busy clinic, south east. Undergoing expansion programme. Strong social media presence. Flexible hours. Fully digital. Top-class equipment/qualified support staff. Contact niall@innovativedental.com.

Orthodontic therapists

Orthodontic therapist required in a beautiful, state-of-the-art modern orthodontic and multidisciplinary practice in north Dublin. Excellent working conditions including flexibility on hours, days to suit your personal and family schedule. Free secure underground parking. Contact hrmanager@ncdental.ie.

Orthodontist/orthodontic therapist. Colm Smith Dental, Cootehill, Monaghan, require an orthodontist/orthodontic therapist to join our existing orthodontist. Multidisciplinary team, visiting specialist oral surgeon, consultant orthodontist, in-house endodontist, excellent nursing/support staff. Accommodation available. Contact drcolmsmith@gmail.com.

Exciting opportunity for a qualified orthodontic therapist to join an established orthodontic practice in Sligo. Full-time or part-time position available. Modern surgery, friendly professional team, excellent working conditions. Relocation costs available. Email CV to jenny.westcoastortho@gmail.com.

Orthodontic therapist required part time in our beautiful new practice, which boasts the latest technology and a friendly team. Located in Clonmel, Tipperary, easy access from Cork/Waterford/Kilkenny. Excellent working conditions and secure staff car parking on site. Contact smile@orthodonticsbyjackie.ie.

Orthodontic therapist positions available at Dublin Orthodontics. Flexible working hours. State-of-the-art facilities with iTero and Trios scanners. Support from a team of experienced specialists, orthodontic therapists and support team. Contact elaine.hand@dublinorthodontics.ie.

Are you fed up with general dentistry? If you would like to train as an orthodontic therapist and progress to a dentist providing orthodontic care, we would love to talk to you. Position full time or part time. Contact orthodontictherapistreplies@gmail.com.

Facial aesthetics

Alexandra Aesthetics: facial aestheticians required for our busy clinics in Limerick, Shannon, Claremorris, and Roscommon. Great support, excellent social media presence, lots of patients. Flexible hours. Great income. Please email jobs@alexandradental.ie.

Dental nurses/receptionists/managers

Dental receptionist/administrator required full-time for dental practice in Galway City. Excellent office, organisational and interpersonal skills required. Reply with CV and reference to ddalystaff@gmail.com.

Full-time nurse required for dental practice in Dublin 3. In-house specialists, friendly environment, immediate start. Contact cddublin@mail.com.

Full-time dental surgery assistant position in a busy, modern, friendly practice in Co. Clare. Immediate start. Please email CV to oldmilldental@outlook.ie.

Full or part-time nurse needed for busy modern practice with friendly team atmosphere: Swords Dental. Good remuneration for the right candidate and flexible hours an option. Please email CVs to colinpatricklynam@hotmail.com.

Lucey Dental is looking for a full-time dental nurse to work with our periodontist, oral surgeon and endodontist. Experience is essential. Excellent remuneration for the right candidate. Award-winning and expanding practice. Contact manager@luceydental.ie.

Galtymore Dental is looking for a part-time dental nurse to replace retiring colleague. We are a small, busy friendly practice in Dublin 12. CVs to galtymoredental@gmail.com or call Marie on 086-851 1141.

Qualified dental nurse required for Kilkenny City endodontic practice. Job is for nine months to cover maternity leave. Potential for the job to become permanent. Approx. 30 hours per week. Computer and administrative skills desirable. Call Naomi on 086-839 1746 or contact kkdentist.irl@gmail.com.

Southgate Dental Drogheda is looking for a qualified part-time dental nurse. The hours will be four days per week and will include a Saturday. Please send your CV to ciarar@sgdental.ie.

Ormond Orthodontics: qualified dental nurse required for our Kilkenny/Thurles orthodontic practice. We are seeking a warm, friendly person with good communication and computer skills. Email application to reception@ormondorthodontics.ie.

Full-time dental nurse, Blessington, Co. Wicklow. Required to join dynamic team. Busy surgery. Immediate start. Email CV, cover letter to niall@blessingtondental.ie.

Monasterevin Dental, Co Kildare. Full-time dental nurse/receptionist. Start August. Motivated person needed to support expanding, busy surgery. Computerised. Surgery and reception duties. Email CV and cover letter to monasterevindental@gmail.com.

Positions available for full-time and part-time nurse/receptionist to join our award-winning team in Co. Meath. Experience is essential, and knowledge of Exact is desirable. Excellent working conditions, with staff benefits. Start date August 2021. Contact dentaljobireland1@gmail.com.

Dental nurse required Drumcondra; Glasnevin Orthodontics. Hardworking, honest, friendly and team work. Chairside assistance, cross-infection control, lab work, etc. No orthodontic experience necessary. Training provided. Full-time over four days – flexibility required. CV to warddecky@gmail.com.

Dental nurse required for a full/part-time permanent position in a modern, friendly practice in Co. Kildare. Fully digital with a staffroom and free parking. Experience preferred but training can be provided. Excellent communication, organisational and IT skills required. Apply by email with CV and cover letter to kildaredentaljob1@gmail.com.

Hygienists

Qualified dental hygienist to join our friendly two-chair practice in Rathgar, two days a week. Established books, fully computerised, high tech, multidisciplinary surgery. Contact info@rathgardental.ie.

Part-time dental hygienist required for practice in Ennis. Contact hickeyaudrey@hotmail.com.

Permanent position for experienced dental hygienist in general dental practice in Drogheda. Full day on Friday. July start. Further enquiries or email CV to angelamkearney@gmail.com.

Qualified dental hygienist to join our friendly two-chair practice in Clondalkin, one day per week. Established books, fully computerised, high-tech, multidisciplinary surgery. Contact pauline@clondalkindental.ie.

Dental hygienist required – full- or part-time. Flexible position, can work any combination of days per month. State-of-the-art clinic, great remuneration package, accommodation provided if relocating – 40 minutes from Newry, 25 minutes from Droghdea/Navan/Dundalk, 40 minutes from Cavan. Contact surgerydental34@gmail.com.

Roscrea. Dental clinic seeking a hygienist to join a passionate group of professionals with an excellent support team. Part- or full-time basis. Contact jobs@shieldsdentalclinic.ie.

Hygienist required for two days per week to replace departing colleague. Full book and excellent remuneration. Located in Bray, Co. Wicklow. Contact dentist2required@gmail.com.

Deansgrange Dental Clinic is looking for a dental hygienist. Experience preferred but not essential, new graduates are welcome to apply. Fully computerised, excellent support staff. Please send CV to careers@deansgrangedental.ie.

Hygienist required one day a week. Wednesday. Full book. Computerised surgery. Excellent support. Email niall@blessingtondental.ie.

Limerick private dental clinic seeking a dental hygienist to join a dynamic team of specialists supported by a professional support team. Contact jobs@shieldsdentalclinic.ie.

Waterford private dental clinic seeking a dental hygienist for multiple days to join a dynamic team. Established books, fully computerised, high tech with excellent support staff. Experience preferred but not essential, new graduates are welcome to apply. Contact: cusackdental@gmail.com.

Dental practice Headford, Co. Galway, seeking qualified dental hygienist to join a dynamic team two days a week, Mondays and Wednesdays. Established books, fully computerised. Excellent support staff. Please email CV to meadowhilldentalsurgery@soegateway.com.

Dr Paul O'Boyle seeks enthusiastic hygienist for three full days at Riverside Dental Practice in Celbridge, Co. Kildare. Busy, private, modern practice. Friendly, experienced team. More details at https://1drv.ms/p/s!Au2G9pTl1owEkzIEHXifcviDfTSX?e=xjymvK or contact: poboyleriverside@hotmail.com.

Full-time position for dental hygienist. Fantastic clinic with Cavitron, Prophyflex, excellent selection of hand instruments. Great support staff. Salary 60-80k per annum, plus relocation package. Will consider two part-time staff. Contact jobs@alexandradental.ie.

Full-time/part-time caring hygienist required to join friendly family dental practice close to Galway City. Well-established busy book with appreciative patients. Excellent terms. Apply with CV to dentistjob1galway@gmail.com.

PRACTICES FOR SALE/TO LET

Co. Tipperary. Three surgeries, two dentists and one hygienist. Excellent opportunity to grow/develop practice. Great staff, good location with parking. Owner retiring. Contact seirldent@gmail.com.

Cork City. Very long-established practice, high footfall. Modern/walkinable, three surgeries, room to expand. Separate decontamination area. Digitalised/computerised. Realistically priced. Strong new patient numbers. Excellent turnover/profits. Very large potential to grow. Contact niall@innovativedental.com.

Dublin south/west practice to rent in a busy shopping centre. Excellent footfall. Three serviced surgeries, planning permission in place, ready to go. Medical practice and very busy pharmacy next door. Ample free parking directly outside. Reasonable rent. Contact niall@innovativedental.com.

Long-established, very busy, two-surgery shop front practice for sale in southwest Dublin, leasehold/freehold. Well-equipped, high turnover, low overhead, mixed practice with free parking. For further info contact fiachloir86@gmail.com.

Single-surgery practice for sale in Co. Galway. Established, modern, digital. Available now and priced for quick sale. Contact galwaypractice@outlook.ie.

Co. Kerry. Long-established, private, PRSI, very busy, three-surgery practice. Excellent location, OPG/central sterilising, hygienist, computerised, digitalised, very well equipped. Strong new patient numbers. Area wide open. Excellent profits, flexible options. Principal available for transition. Contact niall@innovativedental.com.

Co. Donegal. Long-established, single-handed practice. Currently private/PRSI. Good potential. Requires investment in equipment. Principal retiring. Contact mstilvern@gmail.com.

Expressions of interest are invited for the position of

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Iris Cumainn Déadach na hÉireann

Honorary Editor

Dentists with an interest in publishing and experience of editorial boards are invited to express interest in the above position.

The position is voluntary and requires some or all of the following:

- familiarity with peer-reviewed publishing of scientific content;
- knowledge of Irish dentistry and support for the objectives of the Irish Dental Association;
- commitment to the objectives of the Irish Dental Association;
- ability to chair and use the resources available on the Editorial Board for strategic planning; and,
- familiarity with governance procedures in general and best practice.

The Association provides support for the Honorary Editor through the work of the Journal Co-ordinator; the members of the Editorial Board take responsibility for some specific aspects of the work; and the publishers provide the professional services necessary to ensure a high-quality publication for Irish dentists.

Confidential enquiries are welcome to Fintan Hourihan at the Association (as below).

Expressions of interest should take the form of a letter and CV, which can be posted or emailed to the Chief Executive of the Association, Fintan Hourihan – fintan@irishdentalassoc.ie
Irish Dental Association, Unit 2, Leopardstown Office Park, Sandyford, Dublin 18.

Deadline is September 17, 2021

Inspired to fight for dentistry

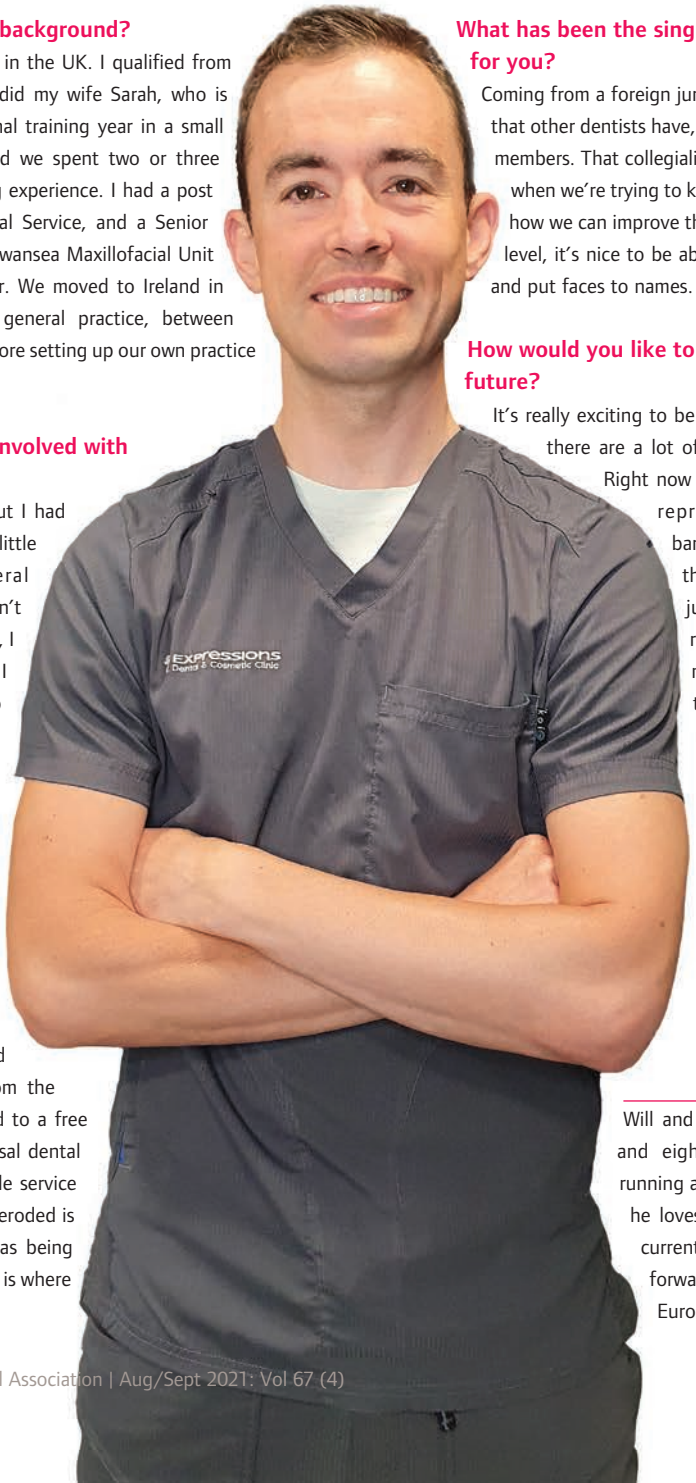
Dr Will Rymer is a dentist in private practice in Roscrea, Co. Tipperary, and is a member of the IDA's GP Committee.

What is your professional background?

I'm originally from Cheltenham in the UK. I qualified from Cardiff University in 2006, as did my wife Sarah, who is from Ireland. I did my vocational training year in a small village just outside Cardiff, and we spent two or three years working in Wales, gaining experience. I had a post in Swansea's Community Dental Service, and a Senior House Officer position in the Swansea Maxillofacial Unit working under Dr Adrian Sugar. We moved to Ireland in 2009, and worked in mixed general practice, between Limerick, Clare, and Galway, before setting up our own practice in Roscrea in 2018.

What led you to first get involved with the IDA?

I was a member of the IDA, but I had just kind of stayed in my happy little bubble, working in general practice, doing my CPD. I didn't go to my regional IDA meetings, I just picked and chose what I wanted to do when I wanted to do it. But I went to the 2018 Annual Conference, and there were a lot of problems with the DTSS scheme at the time (and still are). Kieran O'Connor gave a very inspiring speech about how the IDA and the GP Committee were advocating for dentists regarding the DTSS contract and with the HSE. That inspired me to get involved. Being from the UK, I'm genetically predisposed to a free at the point of delivery, universal dental care model, so to see what little service we have here being constantly eroded is upsetting. I never saw myself as being totally in private practice, which is where I have now been forced.



How has involvement progressed?

Having started in the GP Committee, I have now got much more involved in the IDA in my own region, which is great. The reason I joined and the reason why I wanted to stay in the committees is to attempt to prevent the schemes from collapsing. A huge portion of the population are in desperate need of a service, and if we allow it to continue the way that it is, there won't be anything for them. It's vital to advocate for the profession. We're a pretty small voice in Ireland, so it's really important that we come together as much as possible to advocate for a better system. The public deserves access to affordable dentistry and the schemes that are running are collapsing. And all of the other things that the IDA does, the CPD, all those sorts of things, are important.

What has been the single biggest benefit of IDA membership for you?

Coming from a foreign jurisdiction, I don't have the amazing connections that other dentists have, so joining the IDA really connected me to other members. That collegiality is never more important than now, especially when we're trying to knock heads together and come up with ideas for how we can improve the situation in Ireland. Even at a regional branch level, it's nice to be able to come together, at the moment on Zoom, and put faces to names.

How would you like to see the Association progress in the future?

It's really exciting to be involved in the DTSS negotiations, but I think there are a lot of things that we aspire to for the Association. Right now the issue is that we have to have the right to represent our members fully for collective bargaining. It's an essential element of a union. I think we need to entice more young dentists, not just to the Association, although I think that's really important as well, but there's such a huge number of dentists moving away. I think the training pathways for dentists in Ireland are really restrictive, and a lot of them look elsewhere. It would be great to see some advocacy for young dentists. And to advocate for dental patients, for a system that cares for the vulnerable in society.

Will and Sarah have two children, 10-year-old Isabelle and eight-year-old Harry, and between family and running a practice, he's kept pretty busy. In his free time he loves to cycle the byways of Tipperary, and he is currently Chairperson of his local cycling club. He looks forward to getting back to their annual trips to Europe to cycle the routes of the major tours.

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