

NEW ANTICOAGULANTS

Sir, NICE recently recommended dabigatran etexilate as a possible treatment to prevent stroke and systemic embolism in people with atrial fibrillation. The US Food and Drug Administration have also approved rivaroxaban. It is possible that these two anticoagulants will eventually replace warfarin.

Dabigatran and rivaroxaban are quickly absorbed and have short half-lives compared to warfarin so, in the event of excessive anticoagulant activity, discontinuing the drug is usually sufficient. They have no antidotes. There is no need for routine coagulation monitoring in the same way as warfarin using the prothrombin time INR. Most dental situations such as removal of

a small number of teeth would be comparable to treating a patient with an INR ≤ 4 , relying on local measures to obtain haemostasis – pressure with sterile pads (moistened with water, normal saline or 5% tranexamic acid solution), absorbable oxidised cellulose sponges, and sutures.

The known drug interaction profiles of both dabigatran and rivaroxaban as regards antimicrobials and analgesics are less restrictive than with warfarin. It may be better to confine analgesic use to paracetamol since NSAIDs have antiplatelet effects. Table 1 shows data relevant to dental health care.

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By email

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MUCH TO COMMEND

Sir, those who read the *BDJ* of 10 March (volume 212 issue 5) will be aware that the British Association for the Study of Community Dentistry (BASCD) has written to the Secretary of State for Health reflecting the concerns of the wider public health community about the impact of the Health & Social Care Act on the NHS and its implications for health improvement and inequalities. The same issue carried an editorial by Paul Batchelor, a past president of BASCD, setting out these concerns in more detail and describing a future NHS that may resemble the system in the USA, with all its costs and shortcomings.

Those readers who have experienced previous English NHS reorganisations may see the latest one as the final step in a sequence aimed at creating a real market for health services in England, with a supporting bureaucracy that includes procurement, commissioning, contracting and performance management. Much of the increased cost of the NHS in recent years could be explained by the creation of this chain of processes.

My reason for writing is to point out a significant omission from the BASCD letter and the *BDJ* editorial, which is that the Act has much to commend it from a dental point of view. The irony is that the Act goes a long way to remedying the problems of a dental market but condemning the rest of the NHS to a similar learning process.

Dental services have always operated in a real market, albeit with one major purchaser. Dental practices are all private businesses and we have seen the emergence of national dental companies with significant market share. The lessons learnt from the 2006 contract were set out in the Steele report and the Department of Health (DH) has done a great deal to address these problems and create the conditions where dentists can work within a public health approach to dental disease. It has the potential to create a better future for dental services by a single, consistent commissioning model, an emphasis on oral health outcomes and the opportunity for GPs to practise prevention, without the perverse incentives of the

Table 1 Data comparing warfarin with new anticoagulant drugs

	Warfarin	Dabigatran	Rivaroxaban
Targets	Factors II, VII, IX and X Proteins C and S	Thrombin (inhibits)	Factor Xa (inhibits)
Effective half-life	20–60 h (mean ~40 h)	Adult 12–17 h; old people 14–17 h (assuming no renal impairment)	Young individual 5–9 h; Old people 11–13 h
Food and other effects on absorption	Food may delay rate	Acidic environment needed. Absorption may be reduced by drugs such as proton pump inhibitors and antacids	Food increases rate and extent of absorption by 25–35%
Need for routine moni- toring of coagulation	Yes (PT/INR)	No	No
Antidote/reversal agent available	Yes (vitamin K)	No	No
Drug and food interactions: increased anticoagulation	Antifungals: miconazole, ketoconazole, fluconazole (lesser degree: itraconazole) Antibiotics: erythromycin, clarithro- mycin, (metronidazole possibly) azithromycin, tetracycline, doxycy- cline, cephalosporins, levofloxacin Analgesics: NSAIDs, (antiplatelet agents: aspirin, clopidogrel), ibuprofen, diclofenac, paracetamol (prolonged regular use) Food/herbs: cranberry juice, St John's wort, alcohol, many dietary supplements	Antifungals: ketoconazole, itraconazole Antibiotics: erythromycin, clarithromycin Analgesics: NSAIDs, (antiplatelet agents: aspirin, clopidogrel), ketorolac (diclofenac appears not to interact) Food/herbs: alfalfa, anise, bilberry	Antifungals: ketoconazole, itraconazole (miconazole if renal function impaired) Analgesics: NSAIDs, (antiplatelet agents: aspirin, clopidogrel) Food/herbs: grapefruit juice, alfalfa, anise, bilberry
Drug and food interactions: decreased anticoagulation	Green leafy vegetables (vitamin K), vitamin E	Dexamethasone Carbamazepine Rifampicin St John's wort	Phenytoin Rifampicin St John's wort

current (2006) contract. We have learnt the lessons of a private market in dental services and the 'commodification' of treatment and dental access with a heavy emphasis on activity and intervention where clinical decisions are influenced by the reward system.

The wider NHS could learn a great deal from our experiences. However, we are moving back from 'marketisation' where dental treatment, oral health and previously registration became commodities, often in short supply.

The last time BASCD expressed serious concerns about DH policy on dental services was in 2005, with a reversal of direction and the introduction of Units of Dental Activity (UDAs) as the contract currency. BASCD wrote to the minister at the time setting out their concerns about the effects of the new contract on access to services, oral health and the lost opportunity to move to a preventive approach. The outcome was an agreement to work together. *Delivering better oral health* was the result and it has become a major component of preventive practice.

I hope that once again BASCD will be able to work with the dental team at the DH on developing the preventive potential of a new dental contract.

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BASCD President 2005–2006
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DOWN TO THE WIRE

Sir, I read with interest the description of the Estonian composite and wire case and the subsequent comments about EEA dentists (*BDJ* 2012; 212: 519).

I have been making similar restorations for years and whilst I would agree that composite and wire is a progenitor of modern composite and fibre techniques, the same limitations do not apply; support can include glass fibres, high density polythene and the latest polyaramid fibres, without using metals at all. Wires can substitute for other fibres, but only for temporary reinforcement; a year is much too long, 15 years sounds like punishment! An immediate bridge could be constructed using wire but who uses a temporary bridge to reconstruct a second premolar?

The direct technique is extremely

tricky. I always teach my students to work in an indirect manner. A critical factor in the design of such bridges is the composite used. In the case of a temporary restoration this doesn't matter too much but for a permanent bridge a specific material is required. The differences are significant; EU standards allow composites of a least 80 Mpa tensile strength to be used in dentistry; composites in use today reach strengths of 150–160 Mpa. Composites used for restorations are not suitable for making permanent bridges.

Using wire is very inexpensive and provides some mechanical support but its disadvantages disqualify it from use as it is too flexible and too elastic; impact to such a bridge results in it changing shape, the wire adjusting to the situation whilst the composite breaks, resulting in a bridge of pieces. There is no real bonding between the composite and the wire, which effectively slides through the pieces of composite holding them together for as long as occlusion is minimal.

Using fibres to which are bonded composites creates one monolithic structure with each component reinforcing the other. The mechanical properties are now twice the strength of composite alone. Using three polyaramid fibres and an appropriate composite gives a bite strength of five tonnes, equivalent to the bite of a crocodile or shark not a human being.

Figure 1 shows a bridge of my making using RxCreate with three layers of RxCrown and Pontic on a glass fibre support. Figure 2 was taken eight years later; the neighbouring premolar was lost to caries, but the bridge is still there even with poor oral hygiene. There are limitations for composite and fibre bridges namely that they are unsuitable for very large restorations. However, small gaps where one or two teeth are missing are perfect indications for this technique, especially when needed quickly.

With respect to teaching across the member European states, perhaps we all have to learn from each other. Our Estonian colleague was no doubt trained in Soviet times and perhaps had limited access to modern materials. Estonia



Fig. 1 The bridge just after cementation



Fig. 2 The same bridge eight years later

regained its independence 19 years ago as a result of the break up of the USSR.

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ASPIRE TO PREVENTION

Sir, I read with great interest the letter *Managing aspiration* (*BDJ* 2012; 212: 464). I would like to highlight a few more devices that can be used for preventing aspiration of foreign bodies. A new device, Isolite, delivers continuous throat protection, illumination, retraction and isolation (isolitesystems.com). It has a unique mouthpiece which will prevent aspiration of any foreign objects and also retracts and protects the soft tissues from accidental damage from high speed turbines. A similar device, Isodry, is also available which performs the same function, but requires external lighting.

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