

# CLINICAL

## The 20 most frequently prescribed drugs – that your patients may be taking

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### Abstract

A key part of safe dental practice is knowing and understanding the medical conditions patients will present with, and how these conditions and their medical management may impact on proposed dental treatment. An up to date and comprehensive medical history is an essential part of this. The General Dental Council (GDC UK) in the recent publication ‘Standards for the Dental Team’<sup>1</sup> included a lot of advice and information for dental registrants on their duties, as well as knowledge and understanding. Towards the front of the document is a list of things that patients should expect of their dental professional, and it includes the statement “That all aspects of their health and well-being will be considered and they will receive dental care that is appropriate for them.” Health and well-being extends beyond dental health to include general health also. In another GDC publication “Preparing for Practice – Dental Team Learning Outcomes for Registration”<sup>2</sup>, the GDC defines what it is that each dental registrant needs to “cover the full range of skills, knowledge and behaviours needed to work in dental practice”. There are learning outcomes common to all the dental registrant groups, and the two below are those most relevant to a knowledge and understanding of the medications patients may be taking on presentation to your surgery.

1.1.3 Explain general and systemic disease and their relevance to oral health

1.1.8 Describe the properties of relevant drugs and therapeutic agents and discuss their application to patient management

Table 1. Relevant GDC learning outcomes for dental registrants

### What are the most frequently prescribed drugs?

Within the UK each country collects its own data and since England has the greatest number of prescriptions dispensed an examination of that data will reflect the majority of patients in the UK, and will likely mirror prescribing in the other three UK countries. In England the Health and Social Care Information Centre publishes data on prescribing<sup>3</sup>, and the most recent data is from 2013. Hospital prescribing and dental prescribing data are also published, but this is less useful for the purposes of this article. Out of interest, however, the top two items of dental prescribing come from the British National Formulary (BNF) categories of ‘Infections’ followed by ‘Nutrition and blood’. This is likely to reflect prescribing of antimicrobials to treat infections, followed by prescriptions for fluoride in its different forms. In hospital prescribing, half of the top ten drugs prescribed on an

out-of-hospital prescription are immunomodulatory or biologic drugs, both by cost and also number of prescriptions.

In relation to community prescribing (including general medical practitioners) – which best describes what our patients will present with, the following drugs form the top twenty (by numbers of prescriptions issued) – see table 2.

Rank	BNF NAME	Prescription Items (millions)
1	Simvastatin	39.9
2	Aspirin	30.9
3	Levothyroxine Sodium	27.7
4	Omeprazole	27.3
5	Ramipril	24.9
6	Amlodipine	23.1
7	Paracetamol	22.5
8	Salbutamol	20.7
9	Lansoprazole	20.2
10	Atorvastatin	18.2
11	Metformin Hydrochloride	17.9
12	Colecalciferol	16.3
13	Bendroflumethiazide	16.0
14	Bisoprolol Fumarate	16.0
15	Co-Codamol (Codeine Phosphate/Paracetamol)	15.3
16	Citalopram Hydrobromide	13.7
17	Amoxicillin	13.2
18	Furosemide	12.4
19	Amitriptyline Hydrochloride	11.1
20	Warfarin Sodium	11.0

Table 2: Top 20 prescribed drugs in England (by number of prescriptions)

## Top 20 drugs and their dental relevance

### Numbers 1 (simvastatin) and 10 (atorvastatin)

These are both statins – prescribed to reduce serum cholesterol. This reflects that fact that many patients through diet and (lack of) exercise are at risk of atheroma and so arterial narrowing may occur. Complications of this can manifest as stroke, thrombosis or cardiac ischaemia (angina) or myocardial infarction (MI). Dental professionals need to be up to date on the emergency management of these conditions, and also be aware of the fairly common interaction of imidazole antifungals (e.g. miconazole/Daktarin®) with the statins leading to an increase in skeletal muscle pain, cramps and even muscle damage. Prescribing for patients with oral candidosis needs to account for this.

### Numbers 2 (aspirin), 7 (paracetamol) and 15 (cocodamol)

These are all analgesic medications. Aspirin is the number 2 drug, however it is most likely prescribed in large amounts for those patients who have had a stroke or MI where the aspirin is prescribed as 75mg rather than 300mg tablets and the effect is to reduce platelet adhesion and therefore small clots in those patients who have atherosclerosis – see statins above. The other analgesics are most likely to be prescribed for management of pain, and may reflect the amount of chronic joint pain associated with osteo- and rheumatoid arthritis, both of which are more common in a population with an increasing average age. In terms of dentistry, limited mobility may affect people's ability to access dental surgeries, or with rheumatoid arthritis affecting the joints of the hand – a reduced ability to use a toothbrush, dental floss and other oral hygiene aids.

### Number 3 (levothyroxine)

This will be given as a replacement for those patients who either have an underactive thyroid or who have had a thyroid gland removed because of gland overactivity and need replacement. Much of thyroid disease is autoimmune mediated, and autoimmune disease often presents in multiple sites in a single patient – for example rheumatoid arthritis, with thyroid disease and Sjogren's syndrome. When a patient notes thyroxine on their drug list, the dental professional needs to look out for other autoimmune disease manifestations – and the dry mouth associated with Sjogren's syndrome has immediate dental relevance.

### Numbers 4 (omeprazole) and 9 (lansoprazole)

These drugs are proton pump inhibitors (PPI) used to reduce acid secretion in the stomach. This may be to reduce gastric and duodenal ulceration or to reduce acid reflux causing heartburn and they are also often prescribed alongside steroid tablets to prevent additional gastric mucosal irritation. It is important to check the reason for the prescription with the patient. If the reason is steroid tablets, this may reveal other systemic disease important and relevant to dentistry, and also occasionally patients on oral steroids undergoing minor oral surgery may need additional steroid supplementation. If the PPI is prescribed for

gastric acid reflux, in severe cases there may be dental hard tissue erosion to be seen and also complaints of a bad taste or burning sensation in the mouth.

### Numbers 5 (ramipril), 6 (amlodipine), 13 (bendroflumethiazide), 14 (bisoprolol) and 18 (furosemide)

These are all used in the management of hypertension, though they have different mechanisms of action. Hypertension is often a consequence of atheroma – which takes us back to aspirin and the statins above.

Ramipril is an angiotensin converting enzyme inhibitor (ACEI) and has dental relevance in that the incidence of angioedema (although rare) is increased in patients on this family of drugs. This may present as lip, tongue or face swelling which appears rapidly over an hour or so, either spontaneously or following manipulation of the orofacial tissues – such as in a visit to the dentist/hygienist/therapist. It can be easy for the patient, and the uninformed dental registrant, to confuse the angioedema with an allergic response to contact with a drug or dental material.

Amlodipine is a calcium channel blocker, and these drugs, in some patients, can be associated with gingival hyperplasia and overgrowth. Immaculate dental hygiene can help to reduce this effect in susceptible individuals, and occasionally periodontal surgery is required to reduce the bulk of the fibrous gingival tissue to allow dental restorative and hygiene measures to be carried out.

Bendroflumethiazide and furosemide are both diuretic drugs, which help to remove excess fluid and so improve hypertension and heart failure as well as reduce the work of the heart muscle – again relevant to those patients with angina. The effect of the diuretics in removing excess fluid may manifest in reduced saliva production – resulting in tooth decay and gum disease.

Bisoprolol is a beta-blocker – effectively capping the heart rate and reducing the work of the heart muscle. Again, the beta-blockers are often prescribed in those patients with atheroma and so at risk for angina, MI and stroke.

### Number 8 (salbutamol)

This drug is most often used with an inhaler (or nebuliser) to allow for smooth muscle relaxation of the upper airways and relieve the symptoms of asthma and chronic obstructive pulmonary disease (COPD). Patients with asthma may well be atopic, and also describe hayfever, eczema and other sensitivities such as to nickel. These patients may well also be more likely to be allergic to dental materials (latex gloves for example) and drugs used in dentistry – local anaesthetics and antibiotics. Patients with airways disease will need special consideration for general anaesthetic and sedation, and again, severe asthma can present as an emergency in the dental surgery and an up to date knowledge of its management is required for all dental registrants. Patients with COPD may well be current or former smokers, and so the risk of oral cancer may be increased and suspicious oral mucosal lesions need to be carefully evaluated and

referred where appropriate.

### **Number 11 (metformin)**

An oral hypoglycaemic agent, it is commonly used in the management of type 2 diabetes. It is important to know how well the diabetes is controlled by the patient and that in some patients with type 2 diabetes, where the blood glucose remains high despite the oral anticoagulants, treatment with insulin is also required. These patients, like those with type 1 diabetes, are at risk from hypoglycaemia if the insulin is not matched with dietary carbohydrate intake, and so an awareness of the emergency management of hypoglycaemia in the dental surgery is important. Both type 1 and type 2 diabetes are associated with atheroma and patients often have a history of angina and hypertension, and may also be taking some of the drugs already mentioned above.

### **Number 12 (colecalfiferol)**

This is a vitamin D supplement and is used in the management of vitamin D deficiency - which is a diagnosis on the increase. Vitamin D may be prescribed in children and young adults, but is often prescribed for post-menopausal females at risk of osteoporosis to be taken alone or alongside bisphosphonate drugs to reduce the risk of bone fracture. Vitamin D supplement on the drug list should flag up the possibility of the patient taking a bisphosphonate drug as well. The immediate dental relevance of bisphosphonates is the risk of developing bisphosphonate-related osteonecrosis of the jaws (BRONJ/BONJ/ONJ) which can either occur spontaneously or following dental treatment such as extraction or root surface debridement.

### **Numbers 16 (citalopram) and 19 (amitriptyline)**

These are both antidepressant drugs (albeit in different families: SSRI and tricyclic antidepressants respectively), but are also commonly used in the management of chronic pain such as bone and joint pain, irritable bowel and some orofacial pains (e.g. trigeminal neuralgia, chronic idiopathic orofacial pain, burning mouth syndrome). The principal relationship to dental disease is the common side-effect of these drugs in reducing saliva flow. The effects of a dry mouth on promoting dental decay and plaque with gingival inflammation are often obvious, and increased oral hygiene measures and sometimes the use of topical fluoride is indicated.

### **Number 17 (amoxicillin)**

This is an antimicrobial agent. It features highly in dental prescribing for the management of orofacial infections, and is used by medical practitioners for the treatment of a wide range of infections, especially respiratory infections. It is a broad-spectrum antibiotic and has multiple indications. Patients who repeatedly receive antibiotics for various infections may become sensitised and develop allergies, and the overuse of amoxicillin and similar antibiotics can also lead to the development of resistant bacteria, including MRSA.

### **Number 20 (warfarin)**

Finally, at number 20 on the list, is warfarin. This is an anticoagulant drug which has been around for many years. Patients on warfarin may have had stroke, MI, deep vein thrombosis (DVT) or have recently had a heart valve replacement. They are likely to be on many other drugs too. The anti-coagulant effect of warfarin is measured using the international normalised ratio (INR). A high INR indicates an increased bleeding tendency. Most patients will have a target INR range of between 2 and 3, for indications such as previous stroke, DVT or heart valve replacement. The duration of the warfarin treatment may be limited to a few months. Patients with an INR target range of 3 to 4 will often have had a mechanical heart valve replacement and the warfarin will be used lifelong. The guidance for performing dental surgery on patients on warfarin is regularly updated<sup>4</sup> and currently there should not need to be any alteration in warfarin dose for simple dental surgery in primary care so long as the INR is 4 or less.

### **Summary**

A knowledge and understanding of commonly prescribed drugs and their effects and uses is required by the GDC, and this is so dental registrants, as healthcare professionals, can plan and perform safe and effective treatments for their patients.

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