CORE CURRICULUM IN PHARMACOLOGY FOR DENTAL COURSES

Aim
The overall aim of this curriculum is to establish the core pharmacological knowledge and attitude to drug information that will ensure sound and safe dental practice throughout a dental surgeon's career.

Pre-requisites
Courses should ensure that students have adequate knowledge and understanding of related subjects such as biochemistry and physiology. It would also be preferably if students had some background knowledge of common disorders (e.g. angina pectoris) and pathological processes (e.g. inflammation).

Introduction
In addition to knowledge of particular categories of drugs, dental students should have an understanding of pharmacological principles (included in List A below). The groups of drugs that should be covered divide into four categories as outlined below.

1. Drugs used or prescribed by the dental surgeon, e.g. local anaesthetics.
2. Drugs prescribed by a patient's medical practitioner that directly impinge upon dental treatment, e.g. drugs that affect haemostasis.
3. Categories of drug that are commonly prescribed to a patient by their medical practitioner, some of which may produce oral reactions or adversely interact with a drug administered or prescribed by a dental surgeon.
4. Drugs of abuse.

Those categories of drugs which fall into (1) and (2) should be covered in detail; that is mode of action, pharmacokinetic properties, therapeutic uses, adverse effects and contra-indications. By contrast, for those drugs in categories (3) and (4), emphasis should be placed on the actions, and properties that may impinge on dental practice with less attention given to topics such as a detailed mode of action. List A below includes drugs in groups (1) and (2) whilst List B incorporates drugs in groups (3) and (4).

In order to facilitate effective teaching of pharmacology, it is recommended that, wherever possible, pharmacology be taught in an integrated manner with dental therapeutics.

Core knowledge - List A

Principles
Absorption, distribution, biotransformation and excretion of drugs. Pharmacokinetics
Targets for drug action (receptors, ion channels, enzymes, transporters and DNA)
The nature of receptors, their superclasses and transduction mechanisms
Selectivity, agonism and antagonism, quantitative effects of drugs (dose-response relationships)
The process and mechanisms involved in neurotransmission with particular reference to cholinergic and noradrenergic neurotransmission
Adverse reactions to drugs, including immunological hypersensitivity reactions and with particular regard to anaphylactic shock.
Mechanisms of adverse drug interactions
The organisation of clinical trials and interpretation of clinical trial data
The system of post-marketing surveillance (the Yellow card system)
Prescribing and the Law
**Categories of drugs**

- Adrenoceptor agonists
- Antibacterial agents with particular reference to prophylactic use
- Antifungal agents
- Antiviral agents
- Benzodiazepines
- Drugs which affect haemostasis
- Local anaesthetics
- Non-steroidal anti-inflammatory drugs, paracetamol and carbamazepine
- Steroidal anti-inflammatory agents

**Core knowledge - List B**

**Categories of drug**

- Anti-asthmatic drugs
- Anticonvulsants
- Antidepressants
- Anxiolytics and hypnotics (other than benzodiazepines which are included in List A)
- Cancer chemotherapy (principles of cancer chemotherapy, classification of anti-cancer drugs, and oral and dental problems associated with cancer chemotherapy)
- Drugs of abuse (alcohol, opioids, cocaine, cannabis and amphetamine-like drugs)
- Drugs used in the treatment of cardiovascular diseases (angiotensin-converting enzyme inhibitors; and angiotensin antagonists; adrenoceptor antagonists; calcium-channel blocking agents; diuretics; nitrates; antisyrrhythmic drugs not covered above (including digoxin))
- Drugs used in the treatment of Parkinson's disease
- General anaesthetics and neuromuscular blocking agents
- Immunosuppressants
- Inhibitors of gastric acid secretion
- Insulin preparations and oral hypoglycaemic drugs
- Muscarinic and histamine H1 receptors antagonists
- Neuroleptic drugs
- Opioid analgesics
- Oral contraceptives

**Core skills and attitudes**

- IT skills including searching databases in order to obtain information on drugs.
- Ability to write a prescription (linked with knowledge of prescribing and the law)
- Ability to use the Dental Practitioner's formulary to access information on any drug prescribed by a dental surgeon or medical practitioner, with particularly reference to adverse effects, contraindications and drug interactions.
- Awareness of Drug information Services
- An awareness to continually update a patient's records with regard to drug treatment and to consider any implications of current drug therapy for dental treatment.

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