Pharmacotherapeutics in dentistry

The focus of pharmacotherapeutics, the study of the therapeutic uses and effects of drugs in patients is primarily the patient. A thorough understanding of pharmaceutical sciences cannot be overemphasized in providing appropriate pharmacotherapy, and in anticipating and avoiding drug interactions.[1]

This issue on “Pharmacotherapeutics in Dentistry” attempts to connect the gap between dental clinical practice and pharmacotherapeutics, aiming to communicate high-quality research articles in the field of pharmacotherapeutics as relevant to dentistry. In addition, it highlights the use of indigenous agents for therapeutics believed to have minimal side-effects and use of specialized techniques for local drug delivery to improve the effectiveness of medication without systemic effects.

The World Health Organization (WHO) implemented a global action plan to tackle the growing problem of resistance to antibiotics and other antimicrobial medicines at the Sixty-eighth World Health Assembly in May 2015. The theme of the campaign, “Antibiotics: Handle with Care,” reflected the overarching message that antibiotics are a precious resource and physicians should exercise caution with their use.[2] Inappropriate and over prescription of antibiotics among dental practitioners is a major concern and have been identified as chief factors in the emergence of antibiotic-resistant microbial strains. Judicious use of antimicrobials by choosing the right drug, the standard dosage, and regimen for the appropriate duration should be a priority besides requesting for a culture and sensitivity test.

Drug interactions and adverse drug reactions are not uncommon among prescription drug users. Pharmacovigilance, the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects facilitate reporting of such incidents to the monitoring centers.[3] Yet, reporting of adverse drug reactions is minimal among health care practitioners especially dentists. The Uppsala Monitoring Centre (UMC) functions as the WHO Collaborating Centre for International Drug Monitoring. Their priorities are the safety of patients and the safe and effective use of medicines with a vision of a world where all health professionals make wise therapeutic decisions in their use of medicines.[4]

Pharmacovigilance tools from UMC like “VigiFlow” facilitate e-reporting of Individual Case Safety Reports (ICSR) and “VigiLyze” provide access to the ICSR’s reported. These tools can be utilized by National Centers registered with the WHO Programme for International Drug Monitoring.[5] There is an urgent need for enrollment of more centers into the program.

Recently, there has been an exponential growth in the field of herbal medicines and these drugs are gaining popularity because of their natural origin and fewer side-effects. The WHO has listed 21,000 plants, which are used for medicinal purposes around the world.[6] Nonetheless, an evidence-based approach needs to be assumed for adaptation of such indigenous preparations in prescription writing.

The practice of herbal medicine is a science, and replacement of standard drug regimen is not advocated based on the information provided on unscientific grounds. What may work for one, may not work or may become fatal to another.

Advances in medical science have made possible the use of topical medications coupled with novel approaches which provide targeted and more efficient drug delivery options for oral and para-oral conditions as compared to systemic therapy. Administration of drugs locally into the area of interest and lower systemic side-effects are notable advantages of such therapeutic modalities.

Although proven, restraint should be applied with the use of such skilled modalities. It is sensible only for clinicians trained in such procedures to deliver them to the patients.

Special attention must be given for the oral health care of a pregnant patient as the health status of the mother has a direct effect on the developing fetus. Appropriate pharmacotherapeutic treatment of pregnant patients should not be avoided based on the misconceptions and confusion about the drug safety in these patients.

As clinicians, it is also imperative for us to understand the concept of polypharmacy and its implications on oral and systemic health. Polypharmacy, the use of four or more medications by a patient, with co-existing diseases is most common in the elderly. It is often associated with a decreased quality of life, as a consequence of drug effects, interactions, and prescription cascade. Prescription cascade refers to the process whereby the side-effects of drugs are misdiagnosed as symptoms of another problem resulting in further prescriptions and further side-effects.

Elderly dental patients may present with complaints such as dry mouth, loss of taste, pigmentation or drug induced lichenoid lesions, and hyperplasias of the oral cavity. A thorough medical history and knowledge of the prescription they are following as well as regular reviews are recommended to determine the appropriateness of all medications and deprescription of those considered unfitting but under medical supervision.

Children, on the other hand, are an important segment of the general population. The challenge of providing pharmaceutical
care to children is incorrect dosage, non-availability of appropriate pediatric formulations, drug interactions, and adverse drug reactions. The Pediatric Pharmacovigilance guidelines by the WHO addresses these issues in depth.\(^6\)

Activities in “Clinical Pharmacy” a health science discipline include identification and prevention of drug related problems, monitoring of drug effects, and drug therapy education. Clinical pharmacists practice in health care settings with health care professionals and patients to ensure that the medications prescribed for patients contribute to the best possible health outcomes. Frequent and regular interactions between the two undoubtedly contributes to the better direction and medical care of patients.\(^5\)

Pharmacotherapy is an inseparable aspect of any dental practice and dentists have an ethical duty to follow while delivering quality oro-dental healthcare. It is reiterated through this editorial that dental practitioners keep themselves abreast of the advancements in pharmacy and pharmacotherapy and practice scientifically acceptable standards of care to prevent prescription drug abuse and give the best possible remedy to their patients.

As Hippocrates stated “If you wish to become a physician always follow the maxim, first do no harm” let us all in the dental fraternity strive to make the lives of our patients more comfortable and at ease.

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References
