

5th Asia Pacific Global Summit and Expo on **Vaccines & Vaccination**

July 27-29, 2015 Brisbane, Australia

Occupational exposures and hepatitis B vaccination statuses in dental students in Central Saudi Arabia

Maha

Associate professor, Saudi Arabia

Objective: To assess the nature of occupational exposures occurring to students and to assess the rate of reporting of incidents.

Methods: A self-administrated questionnaire was circulated to third, fourth and final year undergraduate dental students in Dental College of King Saud University, Riyadh, Kingdom of Saudi Arabia from April 2004 to May 2004. The questionnaire was consisted of 4 domains: personal details, hepatitis B vaccination, occupational exposures and reporting of the exposure incident.

Results: Significantly more incidents occurred among final year students than third year students. Through the students there was no correlation between ages, gender, and dominate hand; however, more exposures occurred in female students. A significant decrease in exposures ($p < 0.05$) occurred when an assistant was employed. Some students with one or more exposures during their training were percutaneous injuries predominated. Seventy-seven (28.9%) students stated that they have not been vaccinated against hepatitis B virus and that was noticed among male students.

Conclusion: Dental teaching colleges face with the unique challenge of protecting the student and populations against blood-borne infections. Efforts must go beyond teaching of universal precaution, which should include safer products and clinical procedures that can reduce the risks associated with occupational exposures.

alsarheedm@yahoo.com

Metformin interaction with popular Indian herbal remedies, *Boswellia serrata* (Sallaki) and *Withania somnifera* (Ashwagandha) – PK/PD approach with insulin resistant rodent model

Arun T S, Rekha R Shenoy, C Mallikarjuna Rao and N Gopalan Kuttu
Manipal University, India

The general perception of herbal medicines as a safer alternative to allopathic drugs often leads to self-medication. Concomitant usage of herbal remedies (by chance or choice) with prescription medicines can lead to un-intended interactions modifying pharmacological properties of either drug, which could lead to potential treatment failure.

We designed a study, where metformin [MET], an extensively prescribed anti-diabetic medication was evaluated with commonly used Indian herbal remedies, Sallaki (SAL) and Ashwagandha (ASH). Pharmacokinetic and pharmacodynamics profiles were determined under normal and insulin resistance conditions in rodents. A sensitive bioanalytical method was developed and validated in-house for the determination of metformin. Pharmacokinetic and pharmacodynamic evaluations were performed by using WinNonlin (v 5.3). The evaluations included estimation of C_{max} , t_{max} , AUC_{0-1} , $AUC_{0-\infty}$, V_d , Cl , $t_{1/2}$ and Kel by non-compartmental pharmacokinetic analysis and estimation of plasma glucose concentrations at the scheduled time along with PK sampling. The data assessment involved plotting of response (plasma glucose) vs time and subsequent group wise comparison of the obtained data in both actual and percent-normalized form. The analysis of response vs time data was performed by non-compartmental pharmacodynamics analysis WinNonlin version 5.3.

The PK-PD study demonstrated that increased obesity and associated pathological changes led to increased systemic exposure of metformin. In the absence of herbs, MET glucose profile was stable with a narrow range of plasma glucose variations. ASH does not affect metformin pharmacokinetics. The C_{max} was reduced by 37% and AUC by 47%. Administration of SAL reduces the bioavailability of metformin. In presence of ongoing SAL treatment, higher doses of MET could be required to produce required effect.

This study assumes greater importance considering the fact that the chosen herbal remedies and the drug are used for the treatment of chronic conditions. Not many interactions are reported for metformin owing to its physico-chemical and metabolic characteristics. Our findings demonstrate that concomitant usage of metformin with sallaki may adversely affect the outcome or may result in needless increase in dosage.

rekha.shenoy@manipal.edu