

# 4<sup>th</sup> International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems

March 24-26, 2014 Hilton San Antonio Airport, San Antonio, USA

## Formulation & *in-vitro* evaluation of mucoadhesive microspheres of Pyridostigmine bromide for intra nasal drug delivery

Sharadendu Mishra

All India Institute of Medical Sciences, India

Pyridostigmine bromide is used for the treatment of Myasthenia Gravis. It is poorly absorbed from GIT and has a less bioavailability of 6-7% of the administered dose. Hence its bioavailability can be improved by formulating as mucoadhesive microspheres which are administered through intra nasal route. Microspheres were formulated using emulsification solvent evaporation method and were characterized by FT-IR and SEM. Evaluation was done for its swelling properties, particle size analysis, entrapment efficiency, drug loading and *in-vitro* mucoadhesion studies. The suitability of the microspheres for the release of drug was studied by *in-vitro* release at optimum pH. FTIR studies showed that there is no interaction between drug and polymers. The mean particle size of all formulations was in the range of 305.32  $\mu$ m - 366.96  $\mu$ m. The values for entrapment efficiency and drug loading were in the range of 71% to 79% and 7.1 to 7.9% respectively. The *in-vitro* mucoadhesion studies of all formulations were in range of 82.9 to 99.01%. The degree of swelling of all the batches was in the range of 1.03 to 1.68. SEM of formulations indicated that the microspheres were discrete, uniform and spherical with a smooth surface. It was evident from the *in-vitro* dissolution data that all the formulations released more than 80% of drug by 8 hours, with the highest release of 90.62%. From the result, it has been deduced that this novel drug delivery system of mucoadhesive microspheres not only prolongs the duration of action but also reduces the frequency of usage.

### Biography

Sharadendu Mishra is a Research Scholar at Department of Pharmacology, All India Institute of Medical Sciences, New Delhi, India. He holds an MPharm degree in Pharmaceutics from Amity University, Noida. He has published few papers in reputed journals. His area of interest includes nanoparticulate (polymeric, lipid-based) drug delivery, target oriented drug delivery systems. He graduated from Institute of Technology and Management affiliated to Uttar Pradesh Technical University, Lucknow. He also holds a post graduation diploma degree in Pharmaceutical Regulatory Affairs from Jamia Hamdard University, New Delhi. He also has an experience as a trainee at Zydus Cadila Healthcare Ltd., Ahmedabad, India.

sharadmishra\_89@yahoo.com