In the present day, an attempt was made to formulate and evaluate Microemulsion and Microsphere of Ropinirole Hydrochloride for better treatment of Parkinson’s disease by improving its solubility profile and drug release of Ropinirole Hydrochloride from its formulations in conventional buffers. It is very poorly available at the site of action for fast and immediate treatment. Thus formulated Microemulsion and Microsphere of Ropinirole Hydrochloride avoids first pass metabolism. Microemulsion experiment was performed with Ropinirole Hydrochloride as a drug, Sesame Oil, Sunflower Oil, Castrol oil, Elainic Acid (Oleic Acid), Tween 80, Tween 20, Span 20, Span 80, Methanol, Polyethylene glycol 400, Glycerin as surfactant and co-surfactant. For the formulations F1 to F10 diffusion studies i.e. % Cumulative drug release vs. time (mins) were performed and its % cumulative drug release for all formulations was in between 83.57% to 99.93% in pH 6.6 buffer. Out of Ten formulations F2 showed the maximum % cumulative release of 99.93%. For intranasal delivered microemulsion (0.9334±0.0292μg/ml) than the Intravenous administered PDS (0.1567±0.023 μg/ml). In vivo studies data suggest that the nasal route could exploit to increase the availability of Ropinirole Hydrochloride inside the brain. However, clinical benefits of the formulation developed in this investigation will decide its appropriateness in the clinical practice for the treatment of Parkinson’s disease. Microsphere experiments were performed with ropinirole HCL as a drug, chitosan, guar gum, carbopol 974P as a polymer. Span 80 and Tween 80 used light liquid paraffin, concentrated hydrochloric acid as solvent. Microspheres were formulated by emulsion solvent evaporation technique using different polymers. The in vitro drug release studies were conducted for all the formulations, that is, F1-F21 in 250 ml phosphate buffer pH 6.6 for 12 hrs. Among them, F15 showed 82.7±0.23% drug release and F21 showed 81.2% in 12 hrs in a sustained manner. For In-Vivo evaluation of nasal microspheres of Ropinirole Hydrochloride, rabbit was chosen as a model for study because the blood volume of the rabbit is sufficiently large (approximately 300 ml) to permit frequent blood sampling and allow a full characterization of the absorption and determination of the pharmacokinetic profile of the drug. The Cmax after oral dosing was found to be 107.833±1.567 ng/ml and the corresponding Tmax was at 1.86±0.066 hrs. Thus, the formulated microspheres seem to be a potential candidate as intranasal controlled drug delivery system for treatment of Parkinson’s disease.

**Keyword:** Intranasal Delivery, Parkinson’s disease, Microemulsion, Microsphere.