



Controlled Release Society Indian Chapter

One Day National Seminar on

Translational Research: From Bench to Bedside

Sunday, 17th November, 2019

SOUVENIR & ABSTRACT BOOK

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All Pharmacy Colleges

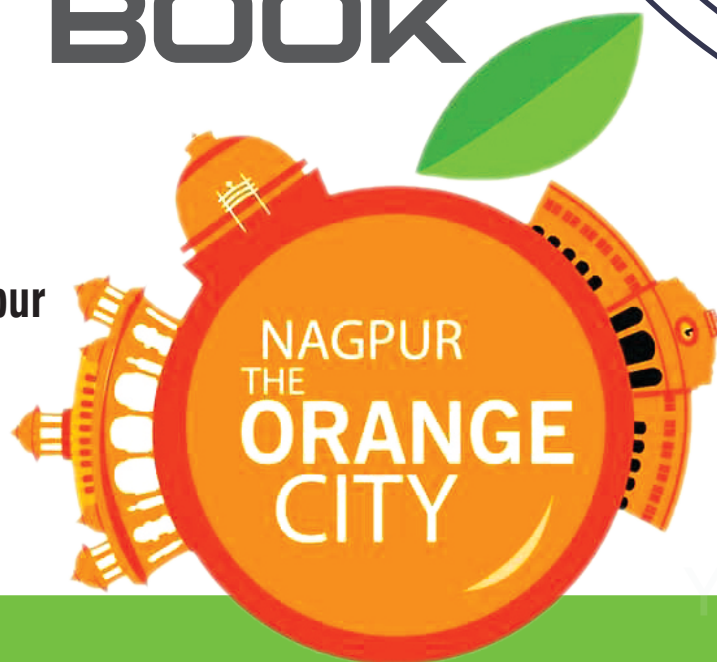
Affiliated to R.T.M. Nagpur University, Nagpur

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Ramdaspath,

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SOUVENIR

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ENHANCEMENT OF SOLUBILITY OF LURASIDONE HYDROCHLORIDE BY PASTILLATION METHOD

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Abstract:

Aim: To increase the solubility and dissolution rate of BCS Class - II drug, LurasidoneHCl (LSH) by using pastillation technique. **Objectives:** The LSH reported to have low solubility and has low dissolution rate and hence reduced oral bioavailability-9-19%(oral). Pastillation is a method produces solidified discrete units, acquired directly from the melt mass called as pastilles. Pastillation is an effective and easiest method for the enhancement of solubility and dissolution rate. **Methodology:** Initial saturation solubility of LSH and dissolution rate was determined and found to be $7.84 \mu\text{g/ml}$ which is quite low. The selection of polymer was done by the solubility studies of drug with different polymers like Poloxamer 188, Kolliphor HS 15, PVP 10000 and PEG 400 in 1:1 ratio. Highest solubility of LSH was found to be $15.10 \mu\text{g/ml}$ with Kolliphor HS 15 and hence used to make its pastilles. Formation of pastilles were confirmed by FT-IR and evaluated for % practical yield, drug contents, solubility study and dissolution rate. Practical yield and drug contents were found to be 90% w/w and 85% w/w respectively. **Results:** Solubility of LSH was increased by pastillation to $17.89 \mu\text{g/ml}$ which is almost 2.5 fold as compared to pure drug. Dissolution rate of LSH pastilles was also enhanced by double than that of the pure drug. **Conclusion:** Thus, pastillation can be an effective and easiest method to enhance the solubility, dissolution rate and bioavailability of poorly water-soluble drugs having good permeability.

Keywords

LurasidoneHCl, Pastillation, Kolliphor HS 15, Solubility enhancement, Dissolution rate.

