SUMMARY
AND
CONCLUSION
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> Etoricoxib, a cox-2 inhibitor drug is extremely bitter in taste resulting poor patient compliance. Complexation with β-Cyclodextrin, Indion 204 resin and suspension with Xanthan gum and Microcrystalline cellulose were prepared to mask the bitter taste of the Etoricoxib.

> Solubility data of pure drug showed 6.77mg / 100ml in distilled water and 9.59 mg/ ml in 0.1N HCl and 5.42 mg/100 ml in 6.8 phosphate buffer.

> The drug: β-cyclodextrin ratio of 1:1 was found to be optimum for drug complexation. The stability constant was found to be 222.99M⁻¹.

> In the preparation of β-cyclodextrin complexes, higher percentage of drug loading was obtained with kneading method using 28 ml methanol and drying the mixture at 60°C.

> Etoricoxib release from the drug β-Cyclodextrin complex in salivary fluid pH 6.8 was found to be 11.1 % in 1 minutes which was insufficient to impart bitter taste.

> The dissolution rate of Pure Drug, Physical Mixture and Kneading mixture in 0.1N HCl at 10 minutes was found to be 58.6 %, 88.56% and 97.21 % indicating drug with β-Cyclodextrin complex prepared from kneading method showed faster dissolution rate.

> Mouth dissolving tablets were prepared from the drug β-Cyclodextrin complexes (Etoricoxib: beta Cyclodextrin 1:1) using varying concentration of Indion 414, Ac-di-sol and Crespovidone PPXL. The formulation F3 exhibited faster dissolution rate (100.2 % in 10minute) as compared to other formulations and marketed product.

> Formulation F3 showed less amount of drug release (2.53%) in salivary fluid as compared to other formulations which was insufficient to impart bitter taste.

> The physical parameters of tablets prepared from β-Cyclodextrin complexes were found to be satisfactory and there is no significant change was observed.

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in hardness, Friability, disintegration time and percentage of drug content after storage of the tablets at different temperatures and relative humidity conditions for four weeks.

- The drug: Resin ratio of 1:3.3 was found to be optimum for drug loading. Higher percentage of drug loading was obtained when treated with inactivated resin.
- Indion 204 swelling in distilled water for 30 minutes gave the maximum drug loading
- Etoricoxib release from drug resin complex in salivary fluid pH 6.8 was found to be 11.54% in 1 minutes which was insufficient to impart bitter taste.
- Mouth dissolving tablets were prepared from drug resin complexes (Etoricoxib : Indion 204 = 1:3.3) using varying concentration of Indion 414, Ac-di-sol, Crospovidone PPXL. The formulation F4 exhibited faster dissolution rate (100.08 % in 10 minute) as compared to other formulations and marketed product.
- Formulation F4 showed less amount of drug release (3.55%) in salivary fluid as compared to other formulations which was insufficient to impart bitter taste
- The physical parameters of tablets prepared from drug resin complexes were found to be satisfactory and there is no significant change was observed in hardness, Friability, disintegration time and percentage of drug content after storage of the tablets at different temperatures and relative humidity conditions for four weeks.
- Xanthan Gum and Microcrystalline cellulose were used for the preparation of Etoricoxib suspension which is a simple rheological modification and efficient technique of masking the bitter taste.
- Higher percentage of taste masking occurred when MCC was used along with Xanthan gum due to formation of complex.
Optimum drug loading was obtained with 1:5 ratios of Xanthan gum and MCC in the suspension of formulation F1.

There is no significant differences in the drug release from the suspension stored at room temperature for 28 days.

All of the formulations like mouth dissolving tablets from beta cyclodextrin (F3), Indion 204 resin (F4) and suspension from Xanthan gum and microcrystalline cellulose (F1) followed first order release kinetics.

FTIR studies of all formulations prepared from beta cyclodextrin and Indion 204 resin by kneading method and physical mixing method, physical mixture of drug, Xanthan gum, microcrystalline cellulose confirmed the intactness of drug in complexes. C=N stretch which is clear in the IR spectra of the Etoricoxib drug is missing, when the drug enters into complex formation with beta cyclodextrin, Indion 204 and in physical mixture of drug with Xanthan gum and microcrystalline cellulose.

Powdered -XRD studies of all formulations prepared from beta cyclodextrin and Indion 204 resin by kneading method and physical mixing method, Physical mixture of drug, Xanthan gum, microcrystalline cellulose showed that there was decrease in the intensity of peaks when compared to the pure drug. This finding confirms that the entrapped drug is complexed monomolecularly in the complexes. Thus the prepared complexes are amorphous in nature and showed faster dissolution rate due to improved solubility.

DSC Studies of all formulations prepared from beta cyclodextrin and Indion 204 resin by kneading method and physical mixing method, physical mixture of Drug, Xanthan gum and microcrystalline cellulose also confirmed complexation of the drug.

Taste evaluation of mouth dissolving tablets prepared from β-Cyclodextrin complexes and drug resin complexes and suspension prepared from Xanthan gum and MCC were performed by human volunteers and they rated all the formulations as tasteless and agreeable.
The anti-inflammatory activity of mouth dissolving tablets prepared from β-Cyclodextrin complexes and Indion 204 resin complexes and suspension prepared from Xanthan gum and Microcrystalline cellulose was evaluated in albino rats using carrageenan as oedematogenic agent and found that all selected formulations that do not have any significant effect on the activity of the pure drug.

Besides the primary objective of masking the bitter taste of the drug, a number of secondary objectives like improvement in solubility, dissolution and flow properties were also achieved by these three techniques. A faster onset of action was obtained by formulation of mouth dissolving tablets and suspensions. The swallowing in paediatrics, geriatrics, and psychiatrics as well as traveling patients who may not have access to water can be overcome by taking these formulations. Enhancement of all these properties achieved by these techniques ultimately provides commercial success.