CONCLUSION

The aim of present research work was to optimize, formulate and evaluate different formulations of fast dissolving tablet(s) of anti-emetic drug prochlorperazine maleate and promethazine theoclate to achieve faster drug release to control in nausea and vomiting.

The UV spectrophotometric method was developed for quantitative estimation of prochlorperazine maleate and promethazine theoclate in the formulations at 254 nm and 250 nm respectively. A study on compatibility of drug with excipients revealed that there was no chemical interaction between the drugs and excipients respectively.

Of the various disintegrants used in the formulation the tablets using direct compression method, using crospovidone exhibited quicker disintegration than those of Ac-di-sol and sodium starch glycolate. Coprocessing of excipients (Ac-di-sol with crospovidone and sodium starch glycolate with crospovidone) an improved disintegration was obtained compared to excipients when used alone. Tablets prepared by pore forming technology was considered to be an effective alternative compared with the use of more expensive disintegrants in the formulation of fast dissolving tablets. The ingredients to be incorporated in the final formulations were optimized for friability and disintegration time of tablets by using $3^2$ and $3^3$ factorial design methods by Design Expert Software 7.1.6. Based on the polynomial equation and response surface plots, the optimized formulation was arrived by using desirability function. The developed optimized formulation was evaluated for disintegration and friability and was found that the predicted values were in close agreement with the actual values, indicating the validation of the model. It can be concluded that by adopting a systematic formulation approach, an optimum point could be reached in the shortest time with minimum efforts.

No significant changes were observed in physical characteristics such as drug content and drug release of optimized fast dissolving tablets, for three months at $45^0$ and 75% RH storing the optimized formulations as stable.
In vivo studies showed significant improvement in pharmacokinetic parameters (AUC, $C_{\text{max}}$, $t_{\text{max}}$ and MRT) and in bioavailability as compared with pure drug. Comparative pharmacodynamic study of fast dissolving tablets with pure drug showed significant reduction in the kaolin consumption (pica), which highlights the potential of fast dissolving tablets in the control of nausea and vomiting. The fast dissolving tablets of anti-emetic drugs were found to be a better option in control of nausea and vomiting by way of fast onset of action for patient convenience and compliance.