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## Formulation and evaluation of anti-suicidal nasal spray of Thyrotropin releasing hormone

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A multi dose nasal spray drug delivery system has been described in this study. Thyrotropin releasing hormone is an anti-suicidal, act by attaching to thyrotropin receptors in the brain and inhibit the suicidal behavior and/or depression. Dose of TRH is 200 µg and can be given once in a day. In the present study, an attempt has been made to prepare nasal spray of TRH by optimizing its pH, viscosity, osmolality and formulation parameters for use in crisis management. Results of preformulation studies of TRH indicate that it has fair solubility and molecular weight to be formulated under nasal drug delivery. To improve the muco-adhesive property, muco-adhesive agent (like sodium carboxymethyl cellulose) was used in the formulation of nasal spray. Results of DSC and FT-IR study have shown that there was no interaction between drug and excipients. F001 to F017 batches were formulated by using different concentration of sodium carboxymethyl cellulose, disodium hydrogen phosphate and sodium dihydrogen phosphate supported by response surface methodology using Box-Behnken factorial design. The prepared solutions were examined for various evaluation parameters like pH, viscosity, osmolality, pump delivery, spray pattern, assay, shot weight, spray content uniformity and plume geometry. The optimization of formulation was done by using box-behnken design. The optimized formulations were subjected to stability studies as per ICH guidelines at 40°C temperature and 75% relative humidity.

### Biography

Patel P A has completed his Ph.D. at the age of 32 years from Hemchandracharya North Gujarat University, India. He is an Associate Professor at Shree Swaminarayan Sanskar Pharmacy College, Gujarat, India. He has published more than 35 papers in reputed journals and serving as an editorial board member of various reputed journals.