Aim of work
3.1 Antidepressants drugs

3.1.1 Citalopram hydrobromide

Various methods have been reported for the estimation of citalopram hydrobromide in biological matrices and dosage forms either spectrophotometrically [Raza et al (2006)], spectrofluorimetrically, capillary zone electrophoresis [Skibinski et al (2005)] or with help of GC-MS [(Nevado et al (2006)]. Literature survey reveals no LC method available for estimation of citalopram hydrobromide in tablet dosage forms. Therefore study was performed to develop rapid and simple LC method for the estimation of citalopram hydrobromide in bulk drug and tablet dosage forms.

3.1.2 Venlafaxine hydrochloride

Literature survey revealed that various methods have been reported for the estimation of venlafaxine hydrochloride in biological matrices. Electrochemical method [Lima et al (1999)] and stability indicating method [Makhija et al (2002)] is available for estimation of venlafaxine in pharmaceutical formulations. But the method reported by Makhija et al has drawback of using mobile phase consisting of acetonitrile: buffer (75:25), higher flow rates, longer retention times and low sensitivity. Therefore cost effective method having high sensitivity is highly desired. Therefore, study involves development of RP-HPLC method using simple mobile phase for quantitative estimation of Venlafaxine hydrochloride in bulk drug and tablet dosage forms.

3.1.3 Sertraline hydrochloride

Literature survey revealed that various methods have been reported for estimation of sertraline in biological matrices. Few methods have been reported for determination of sertraline in pharmaceutical formulations by capillary gas chromatographic procedure, by spectroscopic method [Erk N (2003)], [Bebawy et al (1999)], [Darwish et al (2005)] and LC method using C8 column, acetonitrile: buffer, pH 5.5 (7:3) (Adams 2001). This LC method had longer retention time and also low sensitivity. Therefore method which is rapid, economic and highly sensitive is highly desirable. Therefore study involves development of simple method for the estimation of sertraline in bulk drug and tablet dosage forms by LC method.
3.2 Antipsychotic drugs

3.2.1 Clozapine

Literature survey revealed that various methods have been reported for estimation of clozapine in biological matrices. Few methods have also been reported for determination of clozapine in bulk powder and tablets with spectrophotometry [Mohammed et al (2004)], [Darwish et al (2005)] and with LC [Hasan et al (2002)]. But LC method reported had drawback of using acetonitrile: water (40:60, v/v) as mobile phase with longer retention times and low sensitivity. So a method which is simple, fast and highly sensitive is highly desirable. Therefore study involves development of RP-HPLC method using simple mobile phase which is rapid and highly sensitive for quantitation estimation of clozapine in bulk drug and tablet dosage forms.

3.2.2 Risperidone

Literature survey revealed that various methods have been reported for estimation of risperidone in biological matrices. One stability-indicating method has been reported for determination of risperidone in bulk powder and tablets in presence of its degradation products [El-Sherif (2004)]. But this method has drawback of longer retention time and less sensitivity. Therefore study involves development of simple liquid chromatographic method for the estimation and quantitation of risperidone in bulk drug and tablet dosage forms which is rapid and sensitive enough.

3.2.3 Olanzapine

Literature survey revealed that various methods have been reported for estimation of olanzapine in biological matrices. Few methods have been reported for determination of olanzapine in pharmaceutical formulations by spectroscopy method [Kreb et al (2006)] and LC method [Raggi et al (2000)]. But LC method has drawback of using complex mobile phase consisting of acetonitrile and tetramethylammonium perchlorate, longer retention times and low sensitivity. So a method which is fast and sensitive is highly desirable.
Therefore study involves development of simple method for the estimation of olanzapine in bulk drug and tablet dosage forms by LC method and its subsequent validation as per ICH guidelines.

3.3 Antiparkinsonian drug

3.3.1 Ropinirole hydrochloride

Various methods have been reported for estimation of ropinirole hydrochloride in biological matrices. Literature survey revealed no HPLC method for the quantitative estimation of ropinirole hydrochloride in tablet dosage forms.

Therefore study involves development of RP-HPLC method using simple mobile phase for quantitative estimation of ropinirole hydrochloride in bulk drug and tablet dosage form.