TURJOEM
The Turkish Journal of Occupational / Environmental Medicine and Safety

Vol:2, No:1 (1), 2017 Web: http://www.turjoem.com ISSN : 2149-4711

P158. COMPARISONS OF MIRTAZAPINE DETERMINATION METHODS WITH HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY

Hatice ÖZCAN, Emrah DURAL, Sinan SÜZEN

Ankara University, Institute of Forensic Sciences, Department of Forensic Toxicology, Ankara, Turkey
Cumhuriyet University, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Sivas, Turkey
Ankara University, Faculty of Pharmacy, Department of Pharmaceutical Toxicology, Ankara, Turkey

Mirtazapine (MIRT) is a tetracyclic antidepressant used in the treatment of patients with severe depression. Mirtazapine has a unique and specific effect on both the noradrenergic and serotonergic neurotransmitter systems. In healthy individuals, MIRT is rapidly absorbed after a single oral dose, reaching peak plasma concentrations within 1 to 2.1 hours. The absolute bioavailability at steady state is approximately 50%. MIRT shows linear pharmacokinetics over a dose range of 15 to 80mg/day, elimination half life ranges from 20–40h. MIRT is extensively metabolized in the liver via demethylation and hydroxylation, followed by glucuronide conjugation. MIRT is not cause major toxicity but cases of severe effects (seizures, serotonin toxicity and coma) also have been reported. So, the development of a rapid and simple method for the determination of the MIRT in plasma is important in forensic toxicologic screening to identify and quantify a probable intoxication. Several chromatographic methods were developed for the determination of a MIRT in plasma. All the recent analysis was based on high-performance liquid chromatography (HPLC) with fluorometric, UV detection or gas chromatography with nitrogen phosphorus, electron capture, or mass spectrometric detection and more recently on micellar electrokinetic capillary chromatography. The purpose of this review is comparisons of HPLC methods of MIRT determination. Validation values of methods, which are linearity, extraction recoveries, accuracy, intra- and inter-day precision will be examined. Also, column types, run time, sample preparations and extraction procedures, mobile phase compositions, column temperatures, analysis wavelengths will be discussed as HPLC condition variables.

* htczcn@hotmail.com