

P33. PARACETAMOL AND NAPQI IN BIOLOGICAL FLUIDS, (BLOOD AND URINE) BY USING HPLC AND LC-MS

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Paracetamol is an acylated aromatic amide, which was firstly introduced into medicine as an antipyretic/analgesic by Von Mering in 1893 and ever since it has been used as a painkiller for home medication and reported as an effective treatment for the relief of pain and fever in adults and also in children. With this degree of success and universal availability it was inevitable that paracetamol would be used increasingly for the fashionable habit of self-poisoning. The major aim of this project was to determine the toxic metabolite of the paracetamol (acetaminophen) in serum (blood) and urine samples for the investigation of accidental drug overdose suicide cases. A human volunteer was made to swallow normal paracetamol dose. Blood samples were taken from a human subject at set time intervals by trained qualified personnel and centrifuged to obtain serum. In addition, urine samples were collected at given time intervals from the same individual. Calibration curves for paracetamol and its toxic metabolite N-acetyl-p-benzoquinone imine (NAPQI) were obtained using HPLC and LC-MS. The serum and cleaned urine samples were analysed by HPLC and LC-MS. The assay was performed by using C₁₈ column and mobile phase of acetic acid and acetonitrile (85:15; v/v). Linearity of the method was assayed in the range of 1.25-100ug/ml for paracetamol and 0.75-50ug/ml for NAPQI, with correlation coefficient of $r^2=0.9999$ for paracetamol and 0.9995 for NAPQI. Paracetamol and its toxic metabolite NAPQI compound were not easy to detectable in shorter times after ingesting the tablet. The compound and its metabolites can be detectable after 24 hours due to conjugation in liver and excretion in kidney.