Introduction

Man need to relief pain ergus him to find as many substances as possible naturaly or chemically developed opiates are the first group of pain relief used by man and Morphine among which is the most used. But opiates adverse respiratory effects in addition to its potintially highly addictive agents.

Nalbuphine, a synthetic opioid analgesic which is chemically derived from the oxymorphone is used intramusculary for pain relief in the treatment of acute attacks of headache, Tek and Mellon (1987).

Nalbuphine was approved by the FDA in 1979, Hussar (1980). nalbuphine is either equipotent with morphine or has near equipotence Woollard et al.,(2002). Nalbuphine onset of action after intravenouse administration is 2-3 minutes and its plasma half life is about 5 houres, Jason and Henry(2004).

Following intramuscular injection nalbuphine has been reported to produce peak plasma concentration after 30 minutes. It is metabolised in the liver and is excreted predominantly in the faeces as unchanged drug and conjugates about 7% of a dose has been reported to be excreted in the

urine as unchanged drug, its conjugates and metabolites. Marten Dale (1999).

Nalbuphine is used as an analgesic in the treatment of moderate to severe pain such as that associated with acute and chronic medical disorders including cancer, orthopedic problemes, renal or billary colic, migraine or vascular headache, also used as preoperative-Postoperative sedation and analgesia as well as in obstetrical analgesia during labor and delivery, Du pont pharma(1994).

Nalbuphine is now used by body builders as they believe it has the ability to lower cortisol but on the other hand they become addicted to nalbuphine .

Among the health care profession, nurses represent a specific group of addicts because of their ease to access to drugs, particularly narcotices opioides; potentially highly addictive agents are usually their drug of choice among this group of agents nalbuphine is their choice, klinzig et al.,(2007).

The ante partum pain treatment is often based on the administrating of analgesic drugs. After several fetal bradycardia under epidural

analgesia during labor and an explained death of a 2 hour newborn child, obstetricians asked about the impact of nalbuphine on the foetus. They found that nalbuphine used during the labor could cause respiratory depression, even delayed of the newborn child, julien et al.,(2005).

Because of the limited availability of methamphetamine the abuse of nalbuphine as an alternative for methamphetamine began in late 1991 in korea, yoo et al.,(1995).

For many years foresic toxicology, of application of the scientific principles of toxicology and chemistry to legal matters was considered to be no more than a branch of forensice science and criminology. Nowadays, it is clear that the study of forensic toxicology is important if not vital to the continuid development of life in earth .

Nalbuphine is absorbed after oral administration, but there thought to be considrable first pass metabolism; rapidly absorbed after intramuscular or subcutaneous injection. The major metabolic reaction is conjugation to form nalbuphine glucouronoide (inactive); oxidation to 6-oxonalbuphine occure and the desalkyle derivative,7,8-dihydro-14-hydroxy normorphine, which has also been identified as a metabolite.

Unchanged nalbuphine, its conjugates, and the two metabolites have been detected in the urine, Clarke (2004).

Identification of nalbuphine using different techniques and methods is of importantance for toxicological analysis the aim of the present study is to demonstrate quick and reliable methods of analysis for identification the drug in different cases.

Colorimitric test methods usually include all the analytical techniques in which the analyte either absorbs elecrtomagnetic radiation in the range of 185-800 nm or can be made to undergo a chemical reaction and the product will absorb light at that range. This includes both spot test and the more sophisticated ultraviolet or visible spectroscopy. Spot test is simple in design, which makes it valuable. Since spot test usually screen for a class or a broad category of compounds, a positive result is usually considered to be presumptive only , Steinert and Coffman (1992).

Many substances give distinct colors when brought into contact with various chemical reagents. the color produced with particular reagent may be specific for the compound under investigation , Clarke (2004) .

In the present study, spot test was used to demonstrate the advatage of the method for the detection of the drug at different doses.

Ultraviolet/visible spectrophotometric methods were commonly used for quatifying drugs, the present work applied these methods in an attempt to characterize the studied drug by evaluating its ultraviolet spectral data.

Unequivelent identification, more often than not, requires the use of nuclear magnetic resonanace (NMR) and mass spectrometry (MS) in conjunction with the infrared methods (IR). For better characterization of the studied drug, combination of different instrumental analysis were employed .

Toxicology laboratories usually employ a variety of chromatographic techniques and instruments for The identificatiion and quantification of drugs in biological samples. Of the most often utilized techniques are thin layer chrmatography (TLC) and high performance liquid chromatography (HPLC). TLC method is employed in the present study for detection of nalbuphine.

A comprehinsive approach to the analysis for many drugs in postmortum samples and biological fluides using high performance liquid chromatography (HPLC) has been developed . Giorgi et al.,(2000) reported that due to the good sensitivity and specificity of both HPLC and GC-MS methodes recommend their use in toxicological analysis in both human and veterinary medicine.

Correct interpretation of forensic toxicological results is very much dependent on an assessment of any competing processes.

Hilberg et al., (1999) reported that in special cases where the diagnosis of overdose is to be used as judicial evidence, a single sample of blood may prove insufficient. They added that analysis of several samples of blood and tissues will increase the possibility of reaching a correct conclusion. In the present study, drug concentration in different tissues (liver, kidney, spleen, muscle, blood, brain and hair) were investigated .

Aim of work :

The present work is an attempt to :

1. Employ the different toxicological analytical procedures : spot test, TLC, UV, IR, ^{1}H-NMR, MS spectra and HPLC for idetification of nalbuphine ***(Chapter l)***.
2. Estimate the postmortum drug concentration in some tissues of rats injected intraperitoneally with different doses of the drug ***(chapter II)***.
3. Also ,it is aimed to demonstrate the tissue organ of choice for postmortem examination of the studied drug, nalbuphine ***(chapter II)***.