INTRODUCTION

Thousands of pregnant women take a prescribed or over-the-counter drug preparation daily . Few of these products have been specifically tested for safety and efficacy during normal pregnancy, and there is only scant information on the impact of common pregnancy complications on drug clearance and efficacy (**Carl , et al. , 2005) .**

Treatment with drugs during pregnancy has been a reason for concern . Potential teratogenic risks of treatment and potential risks for the mother of no treatment , have to be weighed each time drug therapy is considered during pregnancy **(Eric , et al. , 2004) .**

The placenta provides a link between the circulations of two distinct individuals but also acts as a barrier to protect the foetus from xenobiotics in the maternal blood **(Michael , et al. , 2004) .**

However , the impression that the placenta forms an impenetrable obstacle against most drugs is now widely regarded as false . It has been shown that nearly all drugs that are administered during pregnancy will enter , to some degree , the circulation of the foetus via passive diffusion . In addition , some drugs are pumped across the placenta by various active transporters located on both the fetal and maternal side of the trophoblast layer **(Michael , et al. , 2004).**

Although the notion that the placenta acts as a metabolic barrier to xenobiotics has some attractions , it seems that for most drugs placental metabolism is relatively minor and is not a significant factor in limiting the extent of their passage across the placenta . In some cases , however , the enzymes activate xenobiotic compounds making them toxic to the foetus **(Pasanen and Pelkonen , 1994) .**

The increasing experimental data on placental drug transfer has enabled clinicians to make better informed decisions about which drugs significantly

cross the placenta and develop dosage regimens that minimise fetal exposure to potentially toxic concentrations **(Michael , et al. , 2004) .**

The foetus has now become the object of intended drug treatment. Extensive research on the placental transfer of drugs such as digoxin and zidovudine has assisted with the safe treatment of the foetus with these drugs in utero. Improved knowledge regarding transplacental drug transfer and metabolism will result in further expansion of pharmacological treatment of fetal conditions **(Michael , et al. , 2004) .**

The positive and negative effects of any drug reflect the dose and route of delivery , the plasma level achieved , the distribution , the availability and coupling of the drug's effector mechanism , its clearance and the physiological adaptations to its effects . The possible applications of a drug for fetal therapy depend not only on transport across the placenta , but also on fetal excretion into the amniotic fluid and subsequent reabsorption (**Carl , et al. , 2005) .**

The structural differences in placentas from different species affects their function . In particular, ***the transfer and metabolism of drugs*** varies enormously between species , making data from animal studies difficult to interpret with respect to predicting feto-maternal drug disposition in human pregnancy **(Van der Aa ,et al. ,1998) .**

For a drug that is not a" known "human teratogen it is necessary to acknowledge that there is very little direct evidence that it is safe in pregnancy . ***No drug has been shown to be entirely safe in human pregnancy ; indeed , it would be impossible to establish complete safety .*** Clearly use of any of these drugs in pregnancy carries some degree of risk for the embryo but the level of risk is undefined **(William and Jane , 2006).**

The prescription of known teratogenic medications requires a careful balance between allowing women access to medications that they might need and avoiding unnecessary exposure to these medications during pregnancy because of their devastating fetal effects**(Margaret,et al. ,2004).**

The FDA , the government agency that oversees the safety of drugs , provides the most widely used system to grade the teratogenic effects of medications . The FDA assigns a safety category for medications by using a 5-letter system : **A , B , C , D ,** and **X (Table 1)** . This safety category must be displayed on the labels of all drugs **(Noah , et al. 2009) .**

Midwives and other health care providers face a dilemma when pregnant woman develops a condition that usually is treated with a pharmacologic agent . Understanding of basic teratology associated with drugs as well as the FDA categorization of agents can assist professionals in recognizing which pharmaceuticals should be used or avoided **(Wendy , et al. , 2002) .**