How to make an informed decision about drugs that you might be taking while planning a pregnancy

With the tragedies wrought by thalidomide back in the 1960s we are all more aware of the risk of drugs to cause foetal abnormalities. Thalidomide was associated predominantly with limb defects but it affected many other organs including eyes, nerve supplies to the face, the heart, urinary tract, kidneys and genitals. Sadly about 40% of babies died before their first birthday. A total of about 10,000 babies worldwide were affected.

None of these abnormalities showed up in animal tests and it was believed to be so safe it was made available over the counter. Abnormalities continued to be seen long after the risk was identified as people continued to use the medication either they or relatives had in medicine cupboards.

The trouble with identifying the risk to a developing baby of a drug taken by a pregnant woman, is that it is impossible to study enough mothers to identify what is normally a very small risk. It is also of course unethical to expose mothers and babes in this way. The effects are only identified by collecting retrospective reports via yellow card reporting (https://yellowcard.mhra.gov.uk/). This data is analysed by the National Teratology Information Service based in Newcastle (www.uktis.org/) who collaborate with a world-wide scheme (https://mothertobaby.org/) so any recurring abnormalities will be seen and monitored.

But BEFORE YOU BEGIN TO PANIC – the risk of most drugs causing malformations is low. Doctors only prescribe what is essential and those drugs on which most information is available to protect you and your unborn baby (and in many cases your older baby who may still be breastfeeding). To date only 30 drugs have been shown to cause major abnormalities

ACE inhibitors e.g. enalapril, ramipril, perindopril	Angiotensin-Converting Enzyme (ACE) Inhibitors are normally stopped when planning a pregnancy
Statins e.g. simvastatin, atorvastatin	Statins are teratogenic and ideally should be stopped at least 3 months prior to conception.

Anti-epilepsy Drugs (AED)	Most AEDs are teratogenic, although the risk is reduced with monotherapy (one single drug) Some AEDs are potentially less likely to cause problems, but the risk to the foetus needs to be balanced with the risk of seizures in the mother which puts both the mother and the baby at possible harm. Phenytoin can retard foetal growth within the uterus, cause an abnormally small head, lead to mental retardation and affect normal development of facial features. Sodium valproate carries a high risk of neural tube defects. Mothers on any AEDs should take 5mg folic acid
Alcohol	Foetal Alcohol Syndrome is seen in babies born to mothers who drink excessive amounts of alcohol and no safe threshold amount can be defined.
Herbal medications	There is little information on safety during pregnancy so these should be avoided.
Antibiotics	Penicillins, erythromycin and cephalosporins are safe. Trimethoprim interferes with folate metabolism and so should be avoided in the 1st trimester. Tetracycline can cause a yellow staining of the teeth and reduce growth of long bones. Aminoglycosides such as gentamycin cause deafness
Warfarin	foetal warfarin syndrome
Lithium	Where possible lithium should be avoided in pregnancy, especially in the 1st trimester, as it can sometimes cause an abnormality of the heart valves. All women on lithium should have a high resolution Ultra sound scan and foetal echocardiography at 18-20 weeks of pregnancy.
Cocaine	cardiovascular, central nervous system defects

Foetal abnormalities due to exposure of drugs in pregnancy (after Lee A, Inch S, Finnigan D Therapeutics in Pregnancy and Lactation Radcliffe Medical Press 2000)

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk but it means that at least 95% of babies are born fit and well with no abnormalities. In most cases if a foetus is developing abnormally the body naturally reacts by producing a miscarriage.

The risk of abnormalities due to medication is greatest in weeks 3-8 after conception when major organs are developing. The neural tube closes between day 17 and 30 after conception so exposure to a drug such as sodium valproate MAY produce a baby with spina bifida. Cleft palate is more likely to occur around day 36. After week 9 structures continue to form but the risk of causing major abnormalities lessens.

What should you do if you need to take medication in pregnancy for a chronic (ongoing) condition?

Before considering pregnancy (or stopping active use of contraception) discuss the risks with your GP or specialist;

- Can you alter your drug regimen to minimise risk to our unborn baby?
- Do you need to take a higher dose of folic acid ? e.g. if taking anti-epilepsy medication
- What are the risks of abnormality? Please make sure your professionals look at specialist sites not just the BNF.
- Are you prepared to take the risk?
- Have you considered that if scans show an abnormality that it may be suggested that you terminate the pregnancy?
- Can you discontinue any of your medications without jeopardising your health?
- What are the risks to your physical/medical health if you stop your regimen?

Where do you look for information?

- Do not just google – you may be lucky and find evidence based information but you may also scare yourself
- Your GP may look in the BNF – that doesn't usually contain qualitative or quantitative information
- Use specialist information sources available online e.g.
  https://mothertobaby.org/fact-sheets-parent/

  http://www.medicinesinpregnancy.org/About-Us/

  www.motherisk.org

- Specialist books are generally very expensive :
  - Drugs in Pregnancy and Lactation (2017) by Forinash A B and Freeman K £74
  - Medication Safety in Pregnancy and Breastfeeding Koren, Gideon 2007 £46
  - The Complete Guide to Everyday Risks in Pregnancy and Breastfeeding Koren G 2004 £12.95
  - Prescribing in Pregnancy 2007 by Rubin PC and Ramsey M £36.47

Will your medical condition affect your labour?

- Do you need to plan ahead e.g. antenatal expression of colostrum from 36 weeks if you have diabetes
- Would physical aids such as pillows, stool etc help you?
- Do you need additional support physically in the post-natal period? e.g. home help, nursing chair, additional pillows, supportive bed, slings to take the weight of baby

If you want to discuss any particular medication please contact me Wendy@breastfeeding-and-medication.co.uk

The information on this sheet is based upon my professional experience as a pharmacist with a specialised interest in the safety of drugs in breastmilk, supported by evidence from expert sources. However, I cannot take responsibility for the prescription of medication which remains with the healthcare professionals involved. I am happy to discuss the evidence by email wendy@breastfeeding-and-medication.co.uk

www.breastfeeding-and-medication.co.uk
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