AIMS For a better birth...

Research Roundup

By Jean Robinson

AIMS Journal, 2005, Vol 16 No 4

- Ultrasound: good news (and bad)
- Teenage mums can do well
- Drugs in pregnancy and schizophrenia

Ultrasound: good news (and bad)

"Reassurances provided by our results to do not lessen our need to undertake further studies of potential bio-effects of prenatal ultrasound scans."

An eight-year follow up of Australian children who took part in a study of ultrasound in pregnancy has found no longer-term damaging effects, although early results showed that the exposed babies had been born smaller.[1]

Doppler scans are different from the usual picture (imaging) scans. They are used to measure blood flow in the arteries supplying the baby, and can be useful particularly in later pregnancy if the baby is thought not to be growing properly.

However, babies do get a larger 'dose' of ultrasound from Dopplers. In the original trial published in 1993,[2] the trial babies had five Doppler scans as well as ordinary scans at between 18 and 38 weeks of pregnancy. The control group had one scan at 18 weeks, and any further scans their doctor thought were necessary.

The purpose of the study was to see if the extra information gained from the ultrasound study improved outcomes by reducing preterm birth and the length of time babies had to stay in hospital. It did not.

The babies in the Doppler group were, on average, smaller and shorter, and more of them were "growth restricted". It seemed that the average reduction in size had tipped more of these children into the 'restricted growth' category.

It appeared to be bone growth that was affected, although head sizes did not differ. A number of animal studies have shown restricted growth when fetuses were exposed to ultrasound in the womb. But by the time they were one year old, the two groups had caught up, so it appears that the growth restriction did not have permanent effects.

The authors say that their study does not prove that human ultrasound can restrict growth, since their study was not designed to look at this question, but the question needs further study. Around 75 per cent of the two groups of children were in the latest follow-up, though more of the control group have dropped out or were untraced. The children have also had many tests along the way for child development, toddler behaviour, early language development, movement and so on.

No significant differences were found between the two groups, except that fewer of the Doppler group had scores outside the normal range on the Early Language Development test, which was given to children before they were three years old. The authors say that since there is no reason to suppose extra scans could improve language, this is likely to be a chance finding. It is also possible that mothers who had the extra scans have given extra attention to their children as a result.

They point out that there is still uncertainty as to the possible effects of ultrasound exposure increasing the number of children who are not righthanded and may result in five extra non-righthanded boys in every 100 births.[3]

This could be caused by the effect of the scans on neurons that are migrating within the brain at that time, and boys' brains are more vulnerable than girls' because they develop more slowly. The authors will be looking at left- and righthandedness when the children in the study are 10 years old.

However, they point out that the equipment used in their study reached intensity levels well below those allowed by the Bio-Effects Committee of the American Institute of Ultrasound in Medicine.

Much modern equipment produces intensity considerably greater than those they used, including the modern pulsed and colour Doppler systems. In some cases, the intensities have been increased nearly eight times.

These levels now have to be displayed on the screen for the user to see, although the users will not know what it means in terms of effects on the embryo or fetus.

AIMS comments

The report is reassuring in that the likely effect on growth has not proved permanent, and that the children's development does not seem different later on. But the initial effect on growth is alarming enough, and it was alarming to see a press report saying this study showed that antenatal ultrasound is safe, especially when the researchers go out of their way to express caution.

Safety is one issue. But one of the main findings of the original study has been forgotten: all those extra ultrasound examinations didn't do any good - so, safe or unsafe, they were unnecessary. Every day, AIMS is receiving calls from pregnant women who are having extra scans for no good reason and who are told unequivocally that it is safe. The lack of longer-term effects found in this study may encourage obstetricians to scan even more.

The basic problems remain. There are still no studies on effects of much earlier exposures of embryos, which are becoming more common. (Could it increase the risk of miscarriage?) There are no studies on the effects of exposure to more powerful equipment (the technology always runs ahead of the research). There are no studies on the effects of prolonged exposures of an hour or more used in many published fetal research studies. And there are no studies including a control group that has had no exposure at all. By the time the first study was done, it was impossible to find such a group, so researchers can only compare more with less.

The small number of large-scale studies with long-term follow-up - especially in this country - is scandalous, especially when every fetus in the country is getting multiple exposures.

Safety, in doctors' terms, means anything which has yet to be proved unsafe. In our terms, it means proved safe. What we need to do is make sure parents know what the obstetricians' definition of 'safe' really means.

References

- Newnham JP et al. Effects of ultrasound during pregnancy: a randomised controlled trial. Lancet, 1993; 342: 887-91
- Newnham JP et al. Effects of repeated prenatal ultrasound examinations on childhood outcome up to 8 years of age: follow up of a randomised controlled trial. Lancet, 2004; 364: 2038-44
- Salvesen KA, Eik-Nes SH. Ultrasound during pregnancy and subsequent childhood

Teenage mums can do well

The UK has the highest rates of teenage pregnancy in Western Europe, and these are often seen as problem pregnancies by the Health Service. However, teenage mothers have fewer problems in giving birth, and lower caesarean rates than older mothers. The problems may stem from the fact that it is poorer young women in deprived circumstances who are more likely to become pregnant early, rather

than girls from a more affluent background.

A GP and sociologist in North Devon studied nine women who had been pregnant as teenagers between 1975 and 1981. They described the rush of love they had felt for their new babies: "I thought she was fantastic, fabulous. She changed me as soon as she was born. I grew up straight away." "It was like he was just the most beautiful thing in the whole world."

Having children to provide for and look after seemed to give the women an added impetus to their lives. "I didn't really know what I wanted to do before ... whereas now I'm determined to go and make a success, because I have to for them."

Having a child early disrupted education for all of them and their employment prospects. But most of them planned to develop careers as the children grew, and some were already studying. The women were very positive about motherhood, and said that having a child had changed them and allowed them to grow up.

AIMS comments

We are not surprised at the findings of this study, which fits in with many stories which have been reported to us. It may be that those who don't see themselves as fitting into the education/career packages on offer are more likely to get pregnant early. As one experienced, older health worker said to us: "Some girls have to get their reproduction out of the way early, before they do anything else."

The study does have weaknesses: it is small, and only nine of the 17 mothers approached took part. Nevertheless, it is important. Teenage mothers often receive negative feedback from maternity services and health visitors; they are made to feel that they are a 'problem' rather than being given support of the kind they want. What's more, why aren't the dads seen as part of the problem?

This account shows, yet again, how the birth experience and contact with the newborn can set motherhood off on the right path. Supporting younger mothers and, later, helping them get back into education and training that fits family needs would be more constructive than labelling. The major problem with teenage pregnancy is one of poverty, and not about the age of the mother.

Reference

- Seamark C, Lings P. Positive experiences of teenage motherhood: a qualitative study. Br J Gen Pract, 2004; 54: 813-8

Drugs in pregnancy and schizophrenia

The risk of developing schizophrenia is known to be connected to a family history of the condition. However, some studies have also shown that, if the mother had flu during pregnancy, the risk of the child later suffering from schizophrenia may be increased.

But this raises the question: is it caused by the infection or the medicine she might have taken to help with the symptoms?

In Copenhagen, a group of over 8000 children has been followed-up, and their mothers asked about medication taken in pregnancy. This study looked at analgesics (pain-relieving drugs) which, like aspirin, are also used to bring down fever, and are sometimes used in combination with other drugs such as phenacetin.[1]

The study showed that taking analgesics in the second trimester (at three to six months into pregnancy) was associated with an increased risk of schizophrenia - in fact, a fourfold greater risk. This persisted even after they allowed for other risk factors, such as a family history of the illness.

The second period is the time when the immature brain is particularly sensitive. Earlier information from the same study has shown that malformation of the fetus is more common when women have taken analgesics in pregnancy. However, the group of mothers who took analgesics was also more likely to have taken mood-changing drugs, so this might suggest that they were more likely to have psychiatric problems.

This study did not find a significant association between viral infections in pregnancy and schizophrenia risk in children, but it does not exclude a possible association because, as a study, it is too small. Only 15 mothers had had viral infections and taken analgesics. When mothers took diuretics (agents that increase the flow of urine) in the final three months of pregnancy, this was also associated with an increased risk of schizophrenia developing later in the child.

The highest apparent risk of all was seen with children whose mothers were treated with morphine or opioid analgesics, but there were so few of these that it was more likely to be a chance finding. These were usually mothers who had undergone surgery during pregnancy.

AIMS comments

This is an important study. We don't know a single mother who doesn't worry about taking medicines during pregnancy and, often, the professionals they ask for advice are woefully ignorant or - even worse - don't bother to check before handing out prescriptions.

We have been carefully watching a succession of studies showing an association between viral infections in pregnancy (particularly flu) and schizophrenia risk. However, because once a mother has caught the flu there's little that can be done about it, worrying isn't going to help. Nevertheless, if it is the painkillers

they take rather than the flu itself, then we do have a choice - and mothers need to know.

Reference

- Holger J et al. Association between prenatal exposure to analgesics and risk of schizophrenia. Br J Psychiatry, 2004; 185: 366-718

Return to top