

Does metformin reduce excess birthweight in offspring of obese pregnant women? A randomised controlled trial of efficacy, exploration of mechanisms and evaluation of other pregnancy complications

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Plain English summary

Reducing birthweight in babies of obese pregnant women

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Plain English summary

Obesity during pregnancy is common. This is of concern because obese women have an increased risk of complications including diabetes mellitus and pre-eclampsia. There is also an increased risk for their babies to be born larger than average or to be stillborn. In addition, there may be harmful effects of maternal obesity that persist into the baby's adult life, including a higher risk of obesity and premature death.

We do not know how obesity causes these problems. We do know that obese pregnant women have higher blood glucose levels and respond less well to the hormone insulin than lean pregnant women, that is, they are 'insulin resistant'. This means that the food supply to the baby is potentially too great, leading to a high birthweight. The link between insulin resistance and high birthweight has already been demonstrated, as has a link between high blood glucose and greater risk of pregnancy problems.

The aim of this study was to see whether or not giving obese pregnant women a drug called metformin reduced the risk of them having a larger than average baby. Metformin is safe to take during pregnancy and works by reducing insulin resistance.

We recruited 449 women to take part in the study. They were randomly assigned to receive treatment with either metformin or placebo tablets during their pregnancy.

The average birthweight of babies born to women in both groups was similar: 3463 g in the placebo group and 3462 g in the metformin group. There was no increased risk of a bad outcome in either of the groups with the exception of nausea and vomiting, which were more common in the metformin group. We also looked at whether or not metformin affected how the body handles glucose, the size of the baby's liver and contractions of the muscle tissue of the womb. We found that metformin does affect how the body handles glucose, but there was no effect on liver size or on womb contractions.

We can conclude that metformin is not an effective treatment for obese pregnant women to reduce the risk of having a larger than average baby.

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