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Occupational Exposure to Pesticides and Pregnancy Outcomes in Gardeners and Farmers: A Study Within the Danish National Birth Cohort

The study found no elevation of risk of non-ideal pregnancy outcome in women who were occupationally exposed to pesticides and whose pregnancies exceeded 4 months.

This was a prospective study of 440 pregnant farmers and gardeners with known usage of pesticides assessed at 11 to 25 weeks. The reference group was 62,164 pregnant women workers whose exposure was unknown but who were neither gardeners nor farmers. Pregnancy outcome was obtained from central registers in Denmark 4 years after birth.

Farmers and gardeners were younger than the reference group and tended to have partners who were also employed in agricultural work. Otherwise the groups had very similar BMI, smoking, alcohol consumption and fertility history.

Foetal loss, multiple birth, gender, size and congenital malformations were present at the same rate in all three groups of women. There was a higher rate of very preterm births in gardeners. Prematurity was caused by rupture of membranes (possibly linked to pregnancy diabetes), preeclampsia and malformation of the uterus. Exposure to pesticides was not associated with any adverse outcome.

Comment

This was a small but prospective study with objective outcome ascertainment. Exposures were reported after pregnancy began and could have been biased as a result.

Regardless of reporting preferences there were no elevated occupational risks for non-ideal pregnancy outcome. 9% of gardeners changed their job/work task once they knew they were pregnant, compared with 7% of farmers and 4% of the control group. In our view this would not significantly affect the interpretation of the study.

The very premature births among gardeners could be explained by statistical effects. Causes of prematurity varied across a wide spectrum of pathogenic types and are unlikely to be linked to one underlying mechanism or adverse exposure.

The study provides good evidence that under normal conditions of work exposure, pesticides do not cause non-ideal pregnancy outcomes in pregnancies that last more than around 4 months. There was no data on outcomes prior to this time.