Obstetrics and gynaecology

Maternal sleeping position may raise the risk of late stillbirth

Pregnant women who went to sleep in a supine position had a two-fold increased risk of late stillbirth, a UK study has shown.

Over a two-year period, 41 maternity units taking part in the Midlands and North of England Stillbirth Study identified 660 women with a normally formed singleton pregnancy which ended in stillbirth. A detailed questionnaire was completed by 291 case group women, as soon as possible after the stillbirth, with the help of a research midwife. A control group was selected matched to the pregnancy duration of the case group women. A total of 2,830 women were approached to be controls, 733 of whom completed a questionnaire.

The median gestational age for cases, at stillbirth, was 37 weeks 4 days and for controls, at the time of interview, 36 weeks 3 days. Although the groups were matched for maternal age and ethnicity, case group women were significantly more likely to be nulliparous; OR 2.37 (95% CI: 1.76-3.18) or have parity ≥ 3; OR 2.63 (95% CI: 1.60-4.33). Also, cases were more likely to have a lower educational attainment, be unmarried (cohabiting or single), and to smoke cigarettes. Stillborn babies were more likely to have a birthweight below the 10th customised centile; OR 7.1 (95% CI: 4.66-10.53)

Questionnaires were completed by case group women a median of 25 days after the stillbirth (range 17-35 days). In contrast, when the controls were surveyed they were asked about their going-to-sleep position and quality of sleep the previous night.

In a multivariable analysis, a significant association was identified in case group women between supine going-to-sleep position on the last night before birth and stillbirth compared with the controls adjusted odds ratio (aOR) 2.31 (95% CI: 1.04-5.11).

The population attributable risk for stillbirth of modifiable risk factors is shown in table 1, above.

In addition, shorter sleep duration on the last night, getting up once or not at all during the night, and daytime napping every day were also associated with increased risk of stillbirth aORs: 1.83 (95% CI: 1.24-2.68), 2.81 (95% CI: 1.85-4.26), and 2.2 (95% CI: 1.26-3.94) respectively. These associations were independent of: gestational age, small for gestational age (SGA) fetus, obesity, level of education, parity and maternal smoking status.

No detectable associations were found between supine going-to-sleep position and SGA, maternal obesity or smoking status.

It is well known that adopting the supine position in the later stages of pregnancy can be hazardous leading to caval compression (compression of the inferior vena cava between the uterus and lumbar spine). The larger and heavier the uterus the greater the risk of compression when supine. This can dramatically reduce venous return and cardiac output which in turn can adversely affect the fetoplacental circulation.

'Importantly, the risk factors identified from our multivariable analysis including obesity, SGA infants, cigarette smoking, and low educational attainment, are consistent with those reported from individual high-quality studies and meta-analyses of large-scale studies in high-income countries,' the study authors state.

They conclude: 'Maternal supine going-to-sleep position is associated with increased risk of late stillbirth in a UK setting. This effect has now been demonstrated consistently by five studies in populations comprising different ethnicities and geographical settings.

'We therefore believe that, given the consistency of findings between studies, it is timely to evaluate whether going-to-sleep position can be modified, and how this can best be achieved.'

The poor demographic matching of cases and controls, and the delay in enquiring about sleep position and quality in case group women weaken this study's conclusion. Nevertheless, its findings are plausible and consistent with other published studies.

Maternal smoking and overweight and obesity are important and, crucially, modifiable risk factors for stillbirth.

I will continue to advise women to rest and sleep on their sides in later pregnancy – SOS, Sleep On Side.[1]

Table 1

Population attributable risk (PAR) for stillbirth of modifiable risk factors

Risk factor	Population exposed	Odds ratio	PAR	(95% CI)
Small for gestational age	13.8%	7.01	45.3%	(33.6 to 56.8%)
Smoking in pregnancy	17.3%	1.94	14.0%	(22.3 to 37.1%)
Obesity	19.5%	1.7	12.0%	(3.8 to 21.5%)
Overweight	29.5%	1.3	8.1%	(-1.5 to 19.5%)
Going to sleep supine	3.3%	2.17	3.7%	(0.5 to 9.2%)

DR CHRIS BARCLAY

Heazell AEP, Li M, Budd J et al. Association between maternal sleep practices and late stillbirth – findings from a stillbirth case-control study. *BJOG* 2018;125:254-62

REFERENCE

1 http://americanpregnancy.org/pregnancy-health/sleeping-positions-during-pregnancy/