

# Work Stress in First Trimester Causes Low Birth Weight Baby

Sir,

Birth weight is an important indicator of the survival of a newborn. Among the many maternal factors associated with low birth weight of the infant, physical activity and the job pressure of the women during her pregnancy are the important ones and also less studied. Association between parental occupation and risk of small for gestation age (SGA) births were seen in 8, 16, 310 first singleton live births in Sweden. After adjusting for other factors, several maternal occupational groups involving more job strain had a significantly higher risk of SGA birth.<sup>(1)</sup> It has been shown that mothers exposed to severe life events during pregnancy have infants with significantly lower birth weight.<sup>(2)</sup> The probable mechanism of stress-related effects on birth weight may be changes in lifestyle due to the exposure and stress-related dysregulation of the hypothalamic-pituitary-adrenal axis (HPA) during pregnancy. Production of corticotropin-releasing hormone appears to be stress sensitive; this neuropeptide may play a critical role in the physiological mediation among stressful experiences and work stress and risk of preterm birth or low birth weight. The timing of these exposures is crucial. Typically, the pregnant women reduce their working hours or workloads at the end of their pregnancy, but the experimental data and emerging theory point to the first rather than the second or third trimester as a crucial period for regulating the relevant fetal hormonal set points, in particular the HPA.<sup>(3)</sup>

A team from University College Dublin, Ireland, examined 676 women who were working at the time of their first prenatal visit and delivered a single baby. Potential

risk factors at work were defined as high physical work demands and working long hours (40 hours or more per week). Results showed significant and strong associations between these high physical work demands and low birth weight. Overall, babies born to women who were exposed to at least two of the four occupational risk factors had a nearly five-fold risk of having a low birth weight and a more than five-fold risk of preterm delivery.<sup>(4)</sup>

In India the number of women in work force is increasing. They work till late in the pregnancy to get the maximum maternity leave during the last few days of the pregnancy and early postpartum days to take care of their babies. More research is needed in developing countries to assess the association between job stress during the first and mid-trimester and pregnancy outcome.

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