

Risk of preterm birth appears to vary by season

Women who become pregnant in spring are more vulnerable to preterm birth than those who conceive in other seasons, according to researchers at the University of Pittsburgh. Results of a large study of such seasonal variation in preterm birth, or birth prior to 37 weeks gestation, are being presented at the 27th annual meeting of the Society of Maternal-Fetal Medicine, being held today through Saturday at the Hilton San Francisco and Towers in California.

"Preterm birth is a complex condition, and risk factors can change with the seasons," said Lisa Bodnar, Ph.D., M.P.H., R.D., assistant professor of epidemiology at the University of Pittsburgh Graduate School of Public Health (GSPH) and a co-author of the study.

Preterm birth affects some 12 percent of pregnancies in the United States, costing an estimated \$26 billion, or \$52,000 per infant, in medical care and lost productivity in 2005, according to the Institute of Medicine. And a recent study from the U.S. Centers for Disease Control and Prevention found that preterm birth contributed to more than a third of infant deaths – twice as many as previously thought and making it the leading cause of infant deaths – yet the underlying causes of premature birth remain poorly understood.

More than 500,000 babies are born too soon each year nationwide, and the preterm birth rate has increased more than 30 percent since 1981. Babies who do survive face the risk of cerebral palsy, mental retardation, chronic lung disease, and vision and hearing loss, as well as other developmental problems.

Researchers analyzed data from 75,399 deliveries over a 10-year period at the university-affiliated Magee-Womens Hospital of UPMC, grouping each by season of "last menstrual period," a date physicians historically have used to estimate conception. Women conceiving in summer had the lowest rate of preterm birth at 8.4 percent, with steadily increased rates for the fall (8.8 percent), winter (9.1 percent) and spring (9.2 percent).

Preterm birth prior to 32 weeks gestation, when complications can be more severe for mother and baby, also took place less often with conceptions in summer and fall than for those in winter or spring, the researchers noted. In fact, those conceiving in summer or fall had a 25 percent reduction in risk over those who conceived in winter or spring.

Tracking such disparities is a valuable way to target specific variables for further study, such as environmental allergens, dietary changes, sunlight exposure, viral infections and exercise habits, noted Hyagriv Simhan, M.D., assistant professor of obstetrics, gynecology and reproductive sciences at the University of Pittsburgh School of Medicine and study co-author.

"Everyone has heard that we 'put on an extra layer' in winter, and micronutrient intake shifts with the seasons," said Dr. Simhan. "We also know that inflammation plays a role. It could be that becoming pregnant when the immune system is primed by viral and bacterial exposures may be a factor weeks down the road."

"There have been studies in Africa of preterm birth in famine or non-famine seasons, but this is perhaps the most rigorous look at preterm birth rates by season in such a large population in an industrialized country," said Dr. Simhan.

Source: University of Pittsburgh Medical Center

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