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Hunt for clues to premature births

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New Delhi, Sept. 7: A team of doctors and scientists in India will track about 8,000 pregnant women over the next five years to understand the mechanisms underlying preterm births, a major cause of deaths among babies less than 30 days old.

The researchers will analyse the health, genome and lifestyle profiles of the pregnant women to try and identify the risk factors for preterm births, which may be used to forecast which women are likely to deliver babies before the normal term of 39 to 40 weeks.

“No one really knows today what drives preterm births — so no one can say for sure which woman is likely to deliver her baby before the normal date,” said Shinjini Bhatnagar, dean of clinical research at the Translational Health Science and Technology Institute, Gurgaon.

The institute will collaborate with the National Institute of Biomedical Genomics, Kalyani, and several hospitals in the National Capital Region in the research programme, funded by the Union science and technology ministry’s department of biotechnology.

Among the 27 million babies born in India each year, health experts estimate, about 3.6 million are born before 37 weeks and about 300,000 of these preterm babies die each year because of associated complications.

“This is a huge number, but preterm births largely remain a medical mystery,” said Sukdev Sinha, a senior scientist with the department of biotechnology who helped bring together the research teams and institutions for the programme.

Researchers from the Gurgaon institute will rely on about 8,000 pregnant women at the district hospital in Gurgaon to provide them with detailed information about their lifestyles and health. The scientists will also study their gut and vaginal microbial populations.

Doctors say that babies delivered before 21 weeks are considered unviable. The programme, which will receive Rs 48 crore from the biotechnology department, will examine women whose babies are born between 21 weeks and 37 weeks.

Such babies may survive, depending on their health at birth and the level of incubator and medical support they receive in the weeks immediately after.

“We suspect that a combination of biological and lifestyle factors may explain preterm births,” Bhatnagar said.

Decades of observations have indicated that women may be at greater risk of experiencing preterm births if their mothers or sisters also experienced preterm births. Women whose first pregnancies ended in preterm births also appear at risk of experiencing preterm births during subsequent pregnancies.

“This suggests there are genetic factors underlying preterm births,” Partha Majumder, director of the Kalyani institute, told **The Telegraph**.

“We’ll try to identify specific genes that may explain why some women have preterm births while others have normal terms.”

Scientists know that certain proteins are expressed at different stages of uterine contractions. One of the tasks of the Kalyani team would be to determine whether such proteins are expressed early in women who experience

preterm births.

“We’ll also look at vaginal microbes,” Bhatnagar said. There are indications, she said, that populations of certain vaginal microbes at various stages of pregnancy might induce early uterine contractions, leading to preterm births.

The programme will seek to identify a set of predictive markers — whether lifestyle factors, infections, vaginal microbes or genes — that could be used to forecast which women are more likely to experience preterm births.

Bhatnagar said it could take up to five years before such predictive markers, if identified during the programme, became available for applications.

Bangladesh, Pakistan and Tanzania have independently launched similar research efforts to identity risk factors for preterm births.