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The Development of Novel Biomarkers for Preterm Labour

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We are inviting pregnant women who are very likely to have a normal and healthy pregnancy to take part in a research study to help mums and babies who suffer with prematurity (babies born too early). Before you decide whether or not to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. One of our team will go through the information sheet with you and answer any questions you may have.

Why are we doing the study?
A baby being born too early is a really important area for us to research as we still understand very little about why some mothers go into labour too early and who it is going to affect. Premature infants are at greater risk for death, cerebral palsy, delays in development, hearing problems, and problems seeing. These risks are greater the earlier a baby is born.

The aim of this study is to develop earlier and safer ways of detecting preterm labour. Research has shown that it may be possible to use blood tests or vaginal swabs taken from the mother early in pregnancy to gather information which may help us to predict the likelihood of preterm labour. In this study we are taking blood and vaginal swabs from healthy women to compare them to women who have a baby born too early. If there are signals that can be used to predict early labour we hope to only find them in the mum's that have a preterm labour and will not be in the group that carry their baby to term. For this we need to take blood and swabs from women like you who have had a normal pregnancy before.

There is also evidence that women with less acidity (a higher pH) or certain types of bacteria in the vagina may be more at risk of preterm delivery. We will perform vaginal swabs for pH and bacteria check when you come to clinic at 16 weeks and 20 weeks of your pregnancy. This is not a swab for sexually transmitted diseases, if this is something you want this should be done at a local family planning or sexual health clinic. We understand that at 16 weeks it would be an additional trip to hospital for you, therefore in addition to the tests we can provide you with a reassurance scan to show you your baby's heartbeat and a picture of your baby. If you would like to know the sex of your baby, we could also tell you this information (but we warn all women a scan can never be 100% accurate). You will still need to attend your booked 20 week scan as this will look at all your baby's organs to check they are developing normally and if you want we can arrange your visit to happen at the same time, (if you have your scan at Liverpool Women's Hospital), so you don't have additional trips to the hospital. However, if you attend a separate appointment we will still scan your baby and provide you with pictures to keep for free.

There is a link between bacteria, infection and preterm birth but it is not clear how the bacteria cause preterm birth or how bacteria get into the womb. Certain "pro-biotics" are being developed for good gut health and help with digestive problems. In this project we are also analysing bacteria in urine (wee) and stool (poo) as well as vaginal bacteria. If there are "bad" bacteria that are linked with preterm birth we may be able to design a "probiotic" to replace the bacteria in the tummy with "good" bacteria to try and prevent preterm birth. We are also collecting stool samples which can be done at 16 and 20 weeks

of pregnancy at home with our specially designed kits and posted back to our lab. These samples are optional, if you did not wish to provide them, you may still be included in the research study.

It might be that a combination of these “biomarkers” or signals in the body that might allow us to predict preterm birth, so our statisticians will be putting all this data together to see if combinations of this information that we find can predict if women are protected from preterm birth or are at risk.

Why have I been chosen?
We are inviting all women over 18 years who have previously had a normal healthy pregnancy that delivered at term.

Do I have to take part?
It is up to you to decide whether or not to take part. If you decide to take part you are free to withdraw at any time without giving a reason. If you do not feel able to take part it will not in any way affect the care you or your family receives.

What will happen to me if I take part?
If you do decide to take part you will be given this information sheet to keep and asked to sign a consent form. We will make a special appointment for you to be seen at 16 weeks for a blood test, vaginal swab and a 3 minute internal scan of your cervix to measure the length (short cervix is a risk factor for preterm birth). If your cervix is very short we will provide you with preventative treatment and you will not be able to take part in the research study. We will then perform a scan of your baby for reassurance and provide you with pictures (and sex the baby if you would like to find out). We will also ask that you donate a urine samples and stool samples at 16 weeks and 20 weeks of pregnancy, these can be done at home. The appointment may take up to 55 minutes for us to chat about your pregnancy, collect information about you and perform the swabs and blood tests with you feeling comfortable. You will be given a second appointment at 20 weeks and the same will happen at this appointment.. We will be looking at genes that make it more likely that you might have a preterm birth but we will not be testing for genetic disease or paternity on any of these samples.

Will my taking part in this study be kept confidential?
Yes. We will follow ethical and legal practice and all information will be handled in confidence. Any information you give us will only be used by the research team in the course of the research to develop these new tests. Any samples and data stored will be stored securely. They will be coded, and no personal data (name and address) will be available to the researchers. However, if any analysis provides clinically relevant information we will inform your medical doctor.

What are the possible benefits of taking part?
The results of this research will not benefit the course of your pregnancy. We hope that the results of the study overall will enable us to improve antenatal care provided to women by developing safer prenatal tests that will help us detect pregnancies at risk of preterm birth. We understand that you are doing research to benefit others and will perform an additional scan to give you the opportunity to see your baby and your baby’s heartbeat by one of the Obstetric doctors at the 16 week visit.

What are the possible disadvantages and risks of taking part?
We will take additional samples of blood, urine, stool (optional), vaginal swabs. This will be carried out by someone who is skilled in taking blood. Some women find it embarrassing to have a vaginal swab but this will be performed by a female doctor or researcher. Ultrasound has an excellent safety record and will not harm your baby but is optional.

What will happen if I don’t want to continue in the study?
You are free to withdraw at anytime. If you withdraw from the study we will not access any further samples and will destroy any of your samples that were collected for the study.

What will happen to any samples I give?
The samples will be coded and no personal data (name and address) will be stored with the sample. The development of these tests will be done in laboratories in the UK, Finland and Germany. We also ask whether you would be willing to gift samples to be used for other ethically approved research studies into pregnancy problems.

What will happen to the results of the research study?
The results from our project will be published as research papers in medical journals. No data will be published that will allow individuals to be identified.

Where can I get further information or discuss any problems?
Please contact a member of the fetal centre on 0151 702 4608 to discuss any questions or worries about the study, or if you have any complaints. If your concerns are not resolved, please contact Patient Advisory Liaison Services (PALS) on 0151 702 4353, if you have any concerns regarding the care you have received, or as an initial point of contact if you have a complaint. You can also visit PALS by asking at the hospital reception.

Who is organising and funding the research?
This research is organised by the Wellbeing-Harris Preterm Birth Research Centre part of the University of Liverpool Centre for Women and Children's Health Research at the Liverpool Women's Hospital.

Who has reviewed the study?
All research in the NHS is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by **NRES Committee**.

Thank you for taking the time to read this information leaflet.