REGIONE TOSCANA

Information on the COMBINED TEST
for determining the risk of chromosome abnormalities in the first trimester of pregnancy

Dear Madam,
The Regione Toscana Healthcare System (SST) offers you the possibility of undergoing, in your first trimester, a test to establish the risk of the foetus being affected by one of the three most common chromosome disorders (Down Syndrome/trisomy 21, Edwards Syndrome/trisomy 18, and Patau Syndrome/trisomy 13).

What is the COMBINED TEST and what is it for?
The combined test consists of an ultrasound measurement (taken between 11^{+0} and 13^{+6} weeks of pregnancy) of the Nuchal Translucency (NT), the thickness of the liquid that collects behind the nape of the foetus' neck, and a maternal blood sample (to be taken between 9^{+0} and $13^{'6}$ weeks of pregnancy - preferably between the 10^{+0} and 12^{+6} weeks), which is tested for the presence of two proteins (PAPP-A and free ß-hCG). These parameters are combined with the age and medical history of the mother to calculate the specific risk for each individual pregnant woman.
The test is considered positive (high risk) if the risk calculated is between 1:2 and 1:300: in these cases, the mother is offered the possibility of undergoing a diagnostic procedure using chorionic villus sampling or, a bit later on, sampling the amniotic fluid (amniocentesis).
The test is considered negative (low risk) if the risk calculated is lower than 1:300, that is 1:301or lower.
In the cases where the risk is calculated to be between 1:301 and 1:1000, the Regione Toscana offers a further (non-diagnostic) screening test, which consists of a maternal blood sample to test for free-cell foetal DNA (NIPT).
The ultrasound scan, the calculation of risk and the advice that follows the test (post test consultation) are performed by a doctor accredited by the Foetal Medicine Foundation (London). Biochemical calculations are performed in accredited laboratories of the Regione Toscana.
At the end of the test, the doctor will inform you of your overall risk, discuss the results with you and recommend possible subsequent pathways of support.

Limits of the COMBINED TEST
1) The combined test has sensitivity of 90%, meaning that it is capable of identifying 90 foetuses suffering from Down Syndrome for every 100 tests performed on affected foetuses (identifies 90 affected foetuses out of 100).
2) In any case, the test has a 7% rate of false positive results: 7 women out of every 100 tests performed will receive a positive result, but the foetus will not be affected by Down Syndrome. A positive test result actually only indicates a higher statistical risk with regard to the pregnancy in question, and does not indicate that the foetus is definitely suffering from a chromosome disorder.
3) A negative test means that the mother is at a low statistical risk of giving birth to a child suffering from trisomy 21, 18, or 13, but this does not mean that it is certain that the foetus will not be affected.

Therefore, it is important to highlight the fact that the test does not provide diagnostic information.
Only performing diagnostic tests such as chorionic villus sampling or amniocentesis can actually confirm or exclude with certainty during pregnancy the existence of a chromosome abnormality in the foetus.

Preparation and rules of behaviour
No preparation is required. There is no fasting requirement. It is recommended not to apply oils, creams, and

ointments to the abdomen on the day of the ultrasound scan.

Risks and possible side-effects

The tests are not invasive and do not involve any risks for the mother or the foetus.

Calculation of a risk on the basis of ultrasound only with evaluation of NUCHAL TRANSLUCENCY

In cases where taking a maternal blood sample for measuring the presence of the two proteins (PAPP-A and free ß-hCG) isn't possible, the risk of chromosome abnormalities can be calculated using nuchal translucency; however, in this case, the sensitivity of the test, i.e. its capacity to identify affected foetuses, is significantly reduced.