Neuro-developmental outcome of children with a measurement of nuchal translucency > 95th centile in first trimester

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Increased nuchal translucency is an important marker for chromosomal abnormalities in first trimester. However, identification of markers in first trimester is merely a screening method to assess the risk of chromosomal abnormality. The definitive test to assess the fetal karyotype is only by invasive testing. The decision about the pregnancy should be based on karyotype report and not just the risk assessment.

Objective: To analyse the correlation of increased nuchal translucency in first trimester with the neurodevelopmental outcome in the postnatal period up to 7 years of age.

Methods and materials: A retrospective study performed in all singleton pregnancies with completed outcomes and normal karyotype with increased nuchal translucency (> 95th centile) detected in the first trimester (CRL between 45-84 mm) was performed. The neurological outcome of the children was assessed by the Ages and Stages Questionnaires (ASQ). Three groups were identified - Group 1: >95th centile for the CRL up to 3.5mm; Group 2: 3.6 - 4.5mm and Group 3: 4.6mm.

<table>
<thead>
<tr>
<th>Total</th>
<th>239</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal neurodevelopment</td>
<td>235</td>
</tr>
<tr>
<td>Neurodevelopmental delay</td>
<td>2</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>2</td>
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Of the total, only two children were found to have a delay in the neurodevelopment. One in group 1 and the other in group 3.

Case 1: 25 year old NT 2.6 mm; CRL 63 mm Risk 1:981 to 1:19623

Case 2: 26 year old NT 4.8 mm; CRL 84 mm Risk 1:455 to 1:5

Presently - 7 years attending 1st class and is doing well

Discussion: A meta-analysis comparing the data of 17 studies showed the overall prevalence was about 1.14%. This is no different from the neurodevelopmental delay seen in around 1% of general population i.e. with normal prenatal screening. Furthermore, the rate of developmental delay did not differ between fetuses with NT >99th centile vs. those with NT <99th centile or between fetuses with NT >99th centile vs. those with NT <95th centile.

Conclusion: Only two (0.8%) children were found to have neurodevelopmental delay with a normal neurodevelopment in the rest 237 which is the same as the incidence seen in general population. The increase in nuchal translucency could not predict developmental delay in the children. Thus there is no correlation between the measurement of nuchal translucency with the neuro-developmental outcome of the children.

References:

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