Infliximab improves growth in paediatric Crohn`s disease only if commenced prior to the onset of puberty or in early puberty

A Gangadharan1*, J Metcalf2, D Giri1, S Irving3, M Auth3, B Krishnamurthy3, K Venkatesh3, JC Blair1, M Didi1

1Department of Paediatric Endocrinology, Alder Hey Children’s Hospital, Liverpool, UK
2Medical student, Liverpool medical university
3Department of Paediatric Gastroenterology, Alder Hey Children's Hospital, Liverpool, UK

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Background:
- Crohn’s disease is a relapsing systemic inflammatory disorder due to up-regulation of pro-inflammatory cytokines including TNF-α.
- PCDAI(Paediatric Crohn's disease activity index) score is a validated measure of disease activity.
- More than 80% of newly diagnosed children present with growth failure.
- Paediatric gastroenterology units in the UK submit data to the UK IBD database which can be accessed when required. One aim of current treatment protocols is to promote growth.
- Studies on the use of Anti-TNF-α antibodies like Infliximab have produced conflicting results with respect to growth.

Objective:
To determine whether Infliximab improves growth in paediatric Crohn`s disease

Method:
- The UK IBD database was used to identify all Crohn`s disease patients receiving Infliximab in our centre.
- Age,PCDAI score, Ht, Wt, BMI and Tanner pubertal status were determined at diagnosis, commencement of infliximab and at the latest assessment.
- Paired-T test was employed to compare above parameters at these time points for patients who were at Tanner stage 1-3 vs. stage 4-5 at commencement of Infliximab therapy.

Results:
- There were 36 patients identified from the database. Seven patients were excluded due to incomplete data.
- The data of 29 patients (14 Female) were available for analysis.
- The median age at commencement of treatment was 14.3 years (range 7.5-17.4). Other patient characteristics are shown in Table-1.
- Statistical analysis and results are shown in Table-2.
- Wt SDS,BMI SDS were not significant between the two groups.

Conclusion:
Infliximab improves growth in children with Crohn's Disease who are prepubertal or in the early stages of puberty. A larger prospective study confined to the paediatric age range is required.

References:
2. Inflamm Bowel Dis. 2007 Apr; 13(4):424-30

Table 1- Patient characteristics and pubertal status

<table>
<thead>
<tr>
<th>Pubertal category</th>
<th>Early puberty</th>
<th>Late puberty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Follow up in yrs(range)</td>
<td>0.3(0.3-2.9)</td>
<td>0.8(0.3-1.9)</td>
</tr>
<tr>
<td>M:F ratio</td>
<td>11:9</td>
<td>4:5</td>
</tr>
</tbody>
</table>

Table 2- Statistical analysis results

<table>
<thead>
<tr>
<th>Pubertal category</th>
<th>Measurements at the start of infliximab treatment. Median (range)</th>
<th>Measurements at the most recent assessment. Median (range)</th>
<th>P value (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early puberty (Tanner 1-3)</td>
<td>Ht SDS -0.94 (-2.15 to 1.72)</td>
<td>Ht SDS -0.45 (-1.88 to 1.86)</td>
<td>0.018* (-0.05 to -0.45 )</td>
</tr>
<tr>
<td></td>
<td>PCDAI score 23(5-87)</td>
<td>PCDAI score 5(0-45)</td>
<td></td>
</tr>
<tr>
<td>Late puberty (Tanner 4-5)</td>
<td>Ht SDS 0.53 (-0.98 to 1.23 )</td>
<td>Ht SDS 0.50 (-0.66 to 1.25)</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>PCDAI score 25 (7-40)</td>
<td>PCDAI score 5 (0-30)</td>
<td></td>
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