ASSESSMENT OF TESTICULAR VOLUME BY ULTRASOUND IN CHILDREN & ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS

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INTRODUCTION

• Poorly controlled T1DM have a significant impact on spermatogenesis and result in infertility (1).
• Also patients with T1DM are at a higher risk for tumor in future including testicular tumor (2).
• Delay in puberty is also known in T1DM being a chronic illness (3).

OBJECTIVES

• Ultrasound examination of the testis in boys with poorly controlled diabetes with disease duration of > 2 years.

RESULTS

Table 1. Mean Testicular Volume & Z Score as per Tanner Staging

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>94</td>
<td>14</td>
</tr>
<tr>
<td>Mean Age</td>
<td>14.5±3.8</td>
<td>8.7±1.1</td>
</tr>
<tr>
<td>Mean Disease Duration</td>
<td>5.8±1</td>
<td>3.6±1.9</td>
</tr>
<tr>
<td>Right Testicular Volume</td>
<td>6.3±4.7</td>
<td>0.9±0.3</td>
</tr>
<tr>
<td>Left Testicular Volume</td>
<td>6.3±4.8</td>
<td>0.8±0.2</td>
</tr>
<tr>
<td>Right testicular volume Z</td>
<td>-0.9±0.8</td>
<td>-0.6±0.4</td>
</tr>
<tr>
<td>Left testicular volume Z</td>
<td>0.2±0.4</td>
<td>-0.1±0.4</td>
</tr>
<tr>
<td>Mean Testicular volume Z</td>
<td>-0.3±0.5</td>
<td>-0.4±0.4</td>
</tr>
<tr>
<td>Microlithiasis Present</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 2. Profile of Children with Testicular Microlithiasis

- We report TM in 11.4% of boys with type 1 DM.
- Also in our cohort the achievement of testicular volume though was delayed it caught up final stage of puberty.
- The prevalence of TM in pediatric population is between 2% to 5.5% (4)
- In adults many studies suggest association between TM and infertility and testicular malignancy (5)
- When testicular TM is detected it is advocated widely to keep a follow-up in adults (6).
- No pediatric consensus exist for management of TM.

CONCLUSION

- Testicular volume though small was within the reference range among poorly controlled patients with T1DM and shows delayed catch up.
- Testicular Microlithiasis was noted in 11% patients.
- Given the higher incidence of testicular tumors and impaired fertility, performing testicular USG might be needed in patients with T1DM as a chronic complication.

REFERENCES