Fractures in Boys with Duchenne Muscular Dystrophy and their Relationship To Age

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Objective

To identify the prevalence of fractures and to characterise length of steroid exposure, mobility status, pubertal status, vitamin D level and bone mineral content (BMC) within 1 year prior to sustaining fracture.

Method

A retrospective review of bone morbidity in a contemporary cohort of boys with Duchenne Muscular Dystrophy (DMD) currently managed in a Scottish tertiary neuromuscular centre.

Clinical details and results of bone surveillance were obtained in 47 boys, aged 9 years (2-16).

DXA bone mineral content (BMC) at total body (TB) and lumbar spine (LS) were adjusted for bone area.

Fractures were classified based on radiological confirmation. Results are reported in median (range).

Results

Demographics

5/10 (50%) of those over 14 had delayed puberty and all of these boys were treated with testosterone therapy.

Table 1: Stages of disease and mobility

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Prepubertal</td>
</tr>
<tr>
<td>2</td>
<td>Pubertal</td>
</tr>
<tr>
<td>3</td>
<td>Postpubertal</td>
</tr>
</tbody>
</table>

Appendicular fractures

Appendicular fractures occur in younger boys and can also present in very young, ambulant, steroid naive boys.

In boys with DMD, symptomatic vertebral fractures occur in older children, with longer duration of steroid therapy.

Bone, Growth Plate and Mineral Metabolism

Shuko Joseph

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