1. JOHYDEV’S DIABETES & RESEARCH CENTRE
Trivandrum, Kerala, India
www.jothydev.net, www.research.jothydev.com,
jothydev@gmail.com

ASSESSING THE BENEFITS OF A
PAINLESS LANCING DEVICE IN A
SUBSET OF PATIENTS FEARFUL OF FINGER PRICKING

R. WARRIER 1, S. BADARUDEEN 2, A. SHANKAR 1, G. KRISHNAN 1, L. RAMACHANDRAN 1, K. THAMPIRAJ 1, S. JOTHYDEV 1, J. KESAVADEV 1

2. MED CENTRE HEALTH ORTHOPAEDICS
& SPORTS MEDICINE
LEXINGTON - KY, USA

BACKGROUND & AIMS

- Self-monitoring of blood glucose (SMBG) has been recommended as the gold standard of glucose monitoring.
- There are a few patients including children and adults who are fearful of finger pricking, due to either real pain or needle phobia.
- Pricking the fingertips for glucose monitoring is in fact, more painful than the insulin shots, the latter being virtually painless with the new slender tiny needles.
- Genteel® is a novel vacuum-based lancing device that claims to be relatively painless by decreasing the depth of lancet penetration and thus decreasing the nociceptive stimuli while lancing.
- A randomized crossover trial was conducted over 6 months, comparing Genteel® versus conventional lancing device.

METHODS

- Study subjects: T1DM and T2DM patients on multiple daily insulin injections and fearful about finger pricking for glucose monitoring
- n=15, age 39.27±18.41y, 40% males, 52.33% T2DM

RESULTS

- Subjects reported significantly lower pain scores using Genteel® (p<0.0001), and also higher SMBG testing frequency (p=0.0002).
- The difference in pain scores with Genteel® was also significant when compared with the subject’s initial perceived pain score prior to randomization (p<0.0001).
- Effect size ‘r’ was determined to be 0.660 (pain score) and 0.602 (SMBG frequency), suggestive of a large effect size difference between the 2 groups.

<table>
<thead>
<tr>
<th>Parameters Assessed</th>
<th>Genteel Lancing Device</th>
<th>Conventional Lancing Device</th>
<th>p value</th>
<th>Effect size r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painscore*</td>
<td>5.00±0.00</td>
<td>1.78±0.43</td>
<td>&lt;0.0001</td>
<td>0.660</td>
</tr>
<tr>
<td>SMBG testing frequency **</td>
<td>0.66±0.23</td>
<td>0.28±0.16</td>
<td>0.0002</td>
<td>0.602</td>
</tr>
</tbody>
</table>

* To the question ‘is pain a limiting factor for regular SMBG monitoring’; subjects graded from 1 to 5 (1=‘very painful and a very strong limiting factor for performing SMBG’; 5=‘not at all a limiting factor’) ** [SMBG frequency (Genteel vs. Conventional)]/Total number of SMBG performed

CONCLUSIONS

- Our results demonstrate the utility of Genteel as a relatively painless lancing device for all ages with fear of pricking and could be a good alternative to the traditional ones.
- Structured SMBG will invariably improve the glycemic control and long-term outcomes.

REFERENCES