Nociceptive blink reflex in patients with myofascial tempromandibular disorder (M-TMD) and healthy controls


[1]Lecturer / Physiology Department/Faculty of Dentistry/University of Khartoum
[2]Professor/ Senior consultant neurologist/ Clinical Neurophysiologist/ Faculty of Medicine/ University of Khartoum/Sudan
[3]Professor/ Senior consultant neurologist/ Clinical Neurophysiologist/ Faculty of Medicine/ University of Khartoum/Sudan
[4]Professor/ Senior consultant neurologist/ Clinical Neurophysiologist/ Faculty of Medicine/ University of Khartoum/Sudan

Corresponding author contact: isnraga4004@gmail.com

Background

M-TMD is a common chronic orofacial pain disorder affecting tempromandibular region. The underlying nociceptive mechanisms in muscles and joints are still unsettled.

AIM of the study

- To assess the parameters of R2 component of nMBR in order to investigate the trigeminal nociceptive pathways in M-TMD patients and compare it with healthy controls.

Methods

- 33 M-TMD patients and 33 controls were strictly matched for age and sex.
- Mental nerve blink reflex was recorded using nociceptive specific stimulating electrode.
- It was recorded from both orbicularis oculi muscles with disposable electromyography electrodes.
- Stimulating current (I₀) was calculated from I₀ (pain threshold) for all participants.
- Onset latency (ms) and response area (mV/ms) of the ipsi- and contralateral R2 component of the blink reflex were calculated.
- Unpaired students T test was used for statistical analysis, significance level was set (P value= 0.05).

Results

Results showed disturbances in the central processing of nociceptive pathways in M-TMD.

- To improve knowledge for diagnosis and treatment evaluation of M-TMD.
- To raise awareness about usefulness of brainstem reflexes in exploring the trigeminal pathways in other craniofacial pain disorders.

Table 1: nMBR R2 onlatencies were significantly prolonged in patients compared with controls.

<table>
<thead>
<tr>
<th></th>
<th>PATIENTS</th>
<th></th>
<th></th>
<th></th>
<th>CONTROLS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFT</td>
<td>nMBR R2</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.8</td>
<td>5.2</td>
<td>5.2</td>
<td>0.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: nMBR response area (mVms) for R2 was lower in patients compared with controls.

<table>
<thead>
<tr>
<th></th>
<th>PATIENTS</th>
<th></th>
<th></th>
<th></th>
<th>CONTROLS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFT</td>
<td>nMBR R 2</td>
<td>.9000</td>
<td>.84261</td>
<td>.1130</td>
<td>.010219</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References