Measurement of the Wave in the Healthy Children by Using the Microvibration on the Scalp

KATSURO IGARASHI

Department of Pediatrics, Hirosaki University School of Medicine, Hirosaki


The microvibration (MV) on the scalp as a substitute for the conventional ballistocardiogram (BCG) and the electrocardiogram (ECG) of the limb lead II were simultaneously recorded on 120 healthy subjects ranging in age from newborn to school children. The duration from the Q wave of the ECG to J deflection of the MV was measured in seconds as the Q-J interval. The Q-J interval may be thought to represent the duration from the ventricular depolarization to the ejection period of the ventricular mechanical systole. The Q-J interval ranges between 0.160 and 0.280 seconds.

Received for publication, December 20, 1973.

Director: Prof. Y. Izumi.

289
Fig. 1. The duration from the Q wave of the ECG of the limb lead II to J deflection of the MV was measured in second as the Q-J interval. Abbreviations: PTG, Plethysmogram; MV, Microvibration on the scalp; ECG, Electrocardiogram.

Table 1. The range of distribution of the Q-J interval for 120 healthy subjects ranging in age from newborn to school children

<table>
<thead>
<tr>
<th>Year of age</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>0~2</td>
<td>0.160~0.200</td>
</tr>
<tr>
<td>3~6</td>
<td>0.200~0.260</td>
</tr>
<tr>
<td>7~8</td>
<td>0.210~0.270</td>
</tr>
<tr>
<td>9~10</td>
<td>0.220~0.280</td>
</tr>
<tr>
<td>11~14</td>
<td>0.220~0.280</td>
</tr>
<tr>
<td>15~</td>
<td>0.250~0.280</td>
</tr>
</tbody>
</table>

complex as in the case of the BCG. The Q-J interval may be thought to represent the duration from the ventricular depolarization to the ejection period of the ventricular mechanical systole.

Acknowledgment

I wish to thank Prof. Y. Izumi for his criticism and Prof. T. Ozaki for his advice during this work.

References