Research Article

ECG Manifestations after Organophosphate Toxicity.

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Manuscript Info

Abstract

Organophosphate poisoning is associated with different ECG changes. Toxicity resulting from organophosphate is public health hazard in emergency medicine department. This is a retrospective study conducted at King Fahd University Hospital. During the study period, a total of 50 patients were admitted with OP toxicity. The results revealed that, No direct correlation was found between OP toxicity, ECG manifestations and outcome.

Introduction:

Toxicity resulting from organophosphate is an important public health hazard in many regions in Saudi Arabia, most commonly in rural areas. Cardiac manifestations that occur in patients with organophosphate (OP) poisoning range from innocuous ECG manifestations, such as sinus tachycardia, to life-threatening arrhythmias like ventricular tachycardia and symptomatic bradycardia also can lead to cardiogenic pulmonary edema and ischemia. The objectives of this study is to evaluate the various ECG manifestations in patients with OP poisoning in correlation to mode of exposure and outcome.

Methods:

This is a retrospective study conducted at King Fahd University Hospital from where the medical records of all patients presented to the emergency department with organophosphate poisoning between the period of January 2000 to December 2010 were reviewed. Demographic data (age and gender), mode of exposure, clinical manifestations, electrographic changes, rate, rhythm, PR and QT intervals, ST segment and T wave changes were traced. Also, patient outcome in terms of length of hospital stay and mortality were recorded.

Result:

During the study period, a total of 50 patients (34 males [68%] and 16 females [32%]) were admitted with OP toxicity. The most common route of exposure was ingestion in 20 patients (67%). Vomiting was the most common clinical presentation (13 patients [43%]). ECG was obtained for 30 of them, Sinus tachycardia (46.6%) was the most common ECG finding followed by T inversion in (30%) prolong QT was found in (16%) and sinus bradycardia in (6%). Cardiac arrest was reported in 2 cases (7%).

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ECG manifestations in organophosphate poisoning

<table>
<thead>
<tr>
<th>ECG abnormalities</th>
<th>No.</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Sinus Tachycardia</td>
<td>14</td>
<td>46.6</td>
</tr>
<tr>
<td>T inversion</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Prolong QTc interval</td>
<td>5</td>
<td>16.9</td>
</tr>
<tr>
<td>sinus bradycardia</td>
<td>2</td>
<td>6.8</td>
</tr>
</tbody>
</table>

**Conclusion:**
Organophosphate poisoning is associated with different ECG changes and most commonly presented with sinus tachycardia, other ECG signs were T wave inversions, prolonged QT and sinus bradycardia. **No direct correlation was found between OP toxicity, ECG manifestations and outcome.**

**Limitation:**
Retrospective type of study.
Small sample size.

**References:**