INTRODUCTION

- Background about toluene exposure in real occupational conditions.
- Crucial role of oxidative stress in toluene’s toxicity mechanism.
- Aim. Investigate the effects of toluene in antioxidant enzymatic mechanisms in workers occupationally exposed in a plastic factory in Mexico City.

METHODS

- This is a cross-sectional study.
- Universe. 68 male workers.
- Inclusion to exposed group: all workers from the factory section with toluene process.
- Exclusion: workers that did not want to participate.
- Elimination: workers with drug consume, alcohol and tobacco excluded, and those with chronic diseases.
- Ceruloplasmine, glutathion-peroxidase (GPx) and superoxide-dismutase (SOD) were measured, the first one in all participants and the enzymes only in 20 samples.
- Hippuric-acid was determined in all exposed workers.
- First, the antioxidant enzymes levels by group were analyzed and after that enzymes levels were correlated with the hippuric-acid level in the exposed group.

RESULTS

- 56 male workers participated. 26 (46.42%) exposed and 30 (46.42%) non-exposed to toluene at work.
- Age, alcohol and tobacco exposition, glucose, cholesterol and triglycerides levels were similar in both groups.
- Exposed group has a median hippuric-acid of 0.5 g/g creatinine.
○ No difference in antioxidant enzymes levels was found between groups.

<table>
<thead>
<tr>
<th></th>
<th>Ceruloplasmine</th>
<th>SOD</th>
<th>GPX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney</td>
<td>0.017</td>
<td>0.49</td>
<td>0.09</td>
</tr>
<tr>
<td>Asintotic Sig.</td>
<td>0.18</td>
<td>0.13</td>
<td>0.95</td>
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<tr>
<td>Exact Sig.</td>
<td>0.13</td>
<td>0.13</td>
<td>0.95</td>
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</tbody>
</table>

*No corrected for ties.

DISCUSSION

○ Limitations.
○ No difference between groups.
○ Co-relations with hippuric acid.
○ Recommendations.