Oxidative stress related to	o occupational exposu	re
Mexic	o City.	
<u>Victor Hugo García</u> ; Horacia Mail adress: vhvid	o Tovalin; Rubén Marroquín co@hotmail.com	
Universidad Nacional Autónoma de México Facultad de Estudios Superiores Zaragoza		
Especialización en Salud en el Trabajo		

## **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 cronic diseases.

- Ceruloplasmine, gluthation-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.









• No difference in antioxidant enzymes levels was found between groups.

	SOD	GPx		
U Mann- Whitney	317.5	43.0	29.0	
Asintotic Sig. (bilateral)	0.219	0.621	0.119	
Exact Sig. 0.656* 0.13				
*No corrected for ties.				

There was no correlation between hippuric-acid and ceruloplasmine or SOD.
Positively correlated to GPx (R= 0.701, p≤0.05). Correlation between hippuric-acid and GPx remained after stratifying by confusion factors. The strongest correlation was observed in the youngest group. (R= 0.959, p≤0.01).

Chart 2. Correlations.						
		Hippuric-	Ceruloplas-			
		acid	mine	SOD	GPX	
Hippuric- acid	Pearson Correlation	1	092	184	.701*	
	Sig. (bilateral)		.628	.587	.016	
	N	30	30	11	11	
Ceruloplasmine	Pearson Correlation	092	1	.036	263	
	Sig. (bilateral)	.628		.916	.435	
	N	30	30	11	11	
SOD	Pearson Correlation	184	.036	1	.033	
	Sig. (bilateral)	.587	.916		.923	
	N	11	11	11	11	
GPX	Pearson Correlation	.701*	263	.033	1	
	Sig. (bilateral)	.016	.435	.923		
	N	11	11	11	11	



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