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Key words: Lead, ALAD, Traffic Policemen, Lead Air Pollution, Baghdad City-Iraq.

امتصاص الرصاص لدى شرطة مرور مدينة بغداد

مة:

خلال دراسة ٢٣٥ فرداً (١٤٦ فرداً من شرطة مرور مدينة بغداد ممن يقضون جميع اوقات عملهم في شوارع (المجموعة الاولى) و ٤٩ فرداً من شرطة المرور ممن يقضون جميع اوقات عملهم داخل المكاتب (المجموعة ٤٠ فرداً من سكنة مدينة بغداد كمجموعة ضابطة (المجموعة الثالثة) تم احتساب نسبة امتصاص الرصاص في عالية انزيم (ALAD) لمعرفة مدى تأثير الهواء الملوث بمادة الرصاص الناتجة من عوادم المركبات عليهم. لقد هناك قيمة معنوية في زيادة امتصاص الرصاص لدى المجموعة الاولى عند مقارنتها بالمجموعة الثانية وة الثالثة. كما كان هناك قيمة معنوية في نقصان فعالية انزيم (ALAD) بالنسبة للمجموعة الثانية والثالثة ايضا ن اي فرق في تركيز مادة الرصاص وفعالية انزيم (ALAD) بين المجموعة الثانية والثالثة. كما درس تأثير بعض المؤثرة على امتصاص الرصاص كالتدخين.

SUMMARY:

Tow hundred thirty five individuals (146 traffic policemen who spent their working hours in the streets of Baghdad City- Group 1, 49 traffic policemen who spent their working hours at the office- Group 2, and 40 individuals from the general population- Grpup 3) were inve-

gnificant difference in the blood lead ALA-D activity between group 2 and effects of other variables (smoking and alcohol) were also studied.

INTRODUCTION:

Increases in environmental pollution

general population. None of the 235 subjects included in this study had a known exposure in any industry directly involved with lead. Alcohol drinkers considered in this study were those who drank more than 40 gm alcohol/day, while cigarette smokers were those who smoked more than 10 cigarettes/day.

Specimens of blood were obtained by venipuncture using heparinized disposable syringes. The samples were transferred directly to disposable heparinized tubes. Analysis of blood lead was performed by using a PYE UNICAM atomic absorption 2900 type flame atomizer. Extraction of lead from the whole blood was done by organic solvents (MiBK

G.2
Indoors working,
traffic policemen
G.3
Control subjects

40

9.5 ± 4.1

195 ± 41.0

Significance of t-test

G.1 VS G.2 & G.3

G.1 VS G.2 & G.3

$P < 0.01$

$P < 0.01$

G.2 VS G.3

G.2 VS G.3

$P > 0.05$

$P > 0.05$

Table 2. Blood lead levels and ALAD activity in outdoors working traffic policemen from different areas of Baghdad City.

Areas	No.	Pb-B ug/dl blood mean $\pm$ SD	ALAD u/ml RBC. mean $\pm$ SD
1	13	13.0 ± 3.6	107 ± 25.4
2	14	16.8 ± 3.2	123 ± 20.5
3	20	14.1 ± 2.0	126 ± 25.0
4	17	15.0 ± 2.5	105 ± 31.2
5	12	12.7 ± 2.7	207 ± 22.9
6	16	15.0 ± 2.8	129 ± 27.5
7	18	15.3 ± 1.8	117 ± 27.6
8	19	16.8 ± 2.1	165 ± 42.2
9	17	16.0 ± 2.8	174 ± 58.2
	146	15.1 ± 2.5	139 ± 34.8
		2.01	2.84

Outdoors traffic				
Policemen	76		16.0 ± 3.0	132 ± 40
Smokers	40		14.1 ± 2.3	147 ± 30
Non-smokers			< 0.05	< 0.05
P				
Indoors traffic				
Policemen	29		11.2 ± 4.5	182 ± 45
Smokers	20		8.7 ± 4.0	195 ± 47
Non-smokers			NS	NS
P				
Control Subjects				
Smokers	22		10.2 ± 4.0	195 ± 40
Non-smokers	18		8.7 ± 4.3	194 ± 41
P			NS	NS

* NS not significant

DISCUSSION:

Changes in the mean value of either Pb-B level or ALAD activity have been oftenly used to detect minimal lead absorption under certain conditions, particularly under long-term steady exposure^{17,18}. The results of Pb-B level and ALAD activity obtained from this study complete those of our previous researches and confirm that different degrees of lead absorption exist in the habitants of Baghdad City.

± 24 u/ml RBC respectively, while the rest obtained from this study was 139 ± 34.8 (table 4). This finding highly indicates that outdoors working policemen are at a high degree of lead exposure than others. The similarity between the ALAD activity in the indoors working policemen (191 ± 35) and that of general population, or control subjects in this study suggests equal exposure levels. The absence of significant difference in Pb-B between different groups of outdoors work-

found to have higher Pb-B than nonsmokers^{22,23}; such results were attributed to the contamination of their fingers and cigarette and/or probably to the impaired lung clearance mechanism. The significant difference in Pb-B level and ALAD activity between smokers and nonsmokers of outdoors working policemen clearly indicated the effect of this factor on blood absorption. However, the absence of any significant effect of cigarette smoking on the parameters of lead absorption in the indoors working policemen

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شكر وتقدير

بكل الشكر والتقدير للسيد مدير عام المرور اللواء قاسم احمد الداود والسيد مدير مرور محافظة بغداد اللواء عباس حسن حمزة ومدير معهد المرور (الملغي) العميد عبد الوهاب التحافي لمساعدتهم القيمة في تحقيق انجاز مستلزمات البحث.