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Professor R.A. Kehoe,
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Dear Bob.

During the last few months I have been discussing with some of my friends and former colleagues the broad question of the diagnosis of lead poisoning. Since there has been so much ambiguity, even in the most recent medical literature, we have decided to try and establish an acceptable and uniform basis for diagnosis and have prepared a statement which expresses our opinions as clearly and concisely as possible.

I am attaching a copy of this statement which is self-explanatory and would greatly appreciate it if you would let me have your views. If you feel that you are able to support the statement in its present form or perhaps after slight amendment I should be most grateful if you would allow me to add your name to the list of signatories. It is our intention to publish an agreed statement, probably in the British Medical Journal.

Best wishes
Yours
Ronald

I know your
criticism. - But please
write making the point.
R.

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The Diagnosis of Inorganic Lead Poisoning

A Statement

Because of varying opinions on the diagnosis of inorganic lead poisoning which appear in the international literature, the signatories hope that the following statement may be of value. The statement is intended to provide guidance for hospital medical staff, industrial medical officers and other medical practitioners, in the examination of cases of suspected lead poisoning in adults.

A diagnosis of lead poisoning should be based on clinical findings and supported by biochemical evidence of excessive lead absorption.

There are varying degrees of absorption and a table has been drawn up in relation to four arbitrary categories of absorption which are described below. The Table is based on personal experience and published data; it lists biochemical tests for estimating absorption and the values likely to be found concurrently with exposure*, and also (with respect to categories C, D) with the onset of symptoms. The four categories are:-

A) Absorption found in the normal population when there has been no occupational or abnormal exposure.

B) Increased absorption resulting from occupational or abnormal exposure which is considered to be safe and which is at present occupationally acceptable. At these levels of lead absorption the mild symptoms listed below, which are common to a number of minor complaints, are not attributable to lead. Where symptoms are reported in association with

* The biochemical test levels fall significantly within a few weeks after the cessation of exposure.

reliable blood lead levels below 80 micrograms per 100 ml, it is probable that other causes of the symptoms have not been excluded.

c) Increased absorption from moderately excessive occupational or other exposure which may be associated with mild symptoms or signs (see below) or rarely with severe symptoms or signs. These levels of absorption even in the absence of [illegible] and signs should be regarded as [illegible] possibility of [illegible]

[illegible] lead poisoning mild symptoms and [illegible] one or more of the following - tiredness or lassitude; constipation; slight abdominal discomfort or pain; anorexia; altered sleep; irritability; anaemia; pallor; blue line; metallic taste, and less frequently diarrhoea or nausea. Many of these are symptoms of other, sometimes trivial, complaints and it is therefore essential for a correct diagnosis of lead poisoning that the symptoms and signs be associated with laboratory evidence of excessive absorption and that other causes be excluded.

Severe symptoms and signs include severe intermittent abdominal pain; reduction of muscle power; muscle tenderness; paraesthesiae, and other symptoms or signs of neuropathy, or encephalopathy. In a lead worker these are strong evidence of poisoning but, again, require supporting laboratory evidence of high lead absorption.

Comments

The incidence of sequelae increases not only with an increase in absorption, when the latter is excessive, but also with the length of time that this absorption is allowed to continue.

Where the results of biochemical tests, with or without positive clinical evidence, reveal moderately excessive exposure (Category C) the lead exposure should be reduced.

At highly excessive levels of absorption (Category D) the employee should be removed immediately from exposure.

TABLE

CATEGORIES OF LEAD ABSORPTION

TEST	A Normal	B Acceptable	C Moderately Excessive
Blood Lead	<30 µg/100 ml.	30-80 µg/100 ml.	80-120 µg/100
Urinary Lead (1)	<80 µg/l.	80-150 µg/l.	150-250 µg/l.
Urinary Coproporphyrin	<150 µg/l.	150-500 µg/l.	500-1,500 µg/
Urinary ∫ amino laevulinic acid	<1 mg/100 ml.	1-2 mg/100 ml.	2-4 mg/100

Accuracy is important especially in the determination of blood and urina
risk of contamination. Periodic cross checking with competent specialis
recommended.

(1) Samples of S.G. less than 1.010 are unreliable and should be rejecte

Notes

A measurement of haemoglobin is useful additional evidence; a reduced ha
found in lead poisoning and may be associated with categories C or D.

Punctate basophil counts though still used, are less reliable than the te