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LIPID PHOSPHORUS IN PLASMA

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Introduction

THE lipid phosphorus of blood and tissues is found in lecithin, kephalin and sphingomyelin. In plasma, lecithin is the major phospholipid. As a matter of fact, later determinations by Taurog (1944 and 1943) have led us to believe that lecithin constitutes as much as 95 per cent of the total phospholipids. The importance of its determination is being appreciated as the functions of phospholipids in the body are being understood by using radio phosphorus. Little has been done regarding the estimation of lipid phosphorus in our country in normal persons. Hence, we have undertaken this study in a number of persons, apparently normal, mostly students of our College between the age group 20-30.

Experiment

The method of Youngburg and Youngburg (1930) using the stannous chloride reagent of Kuttner and Cohen (1927) was employed. Fiske and Subbarow (1925) suggest the use of 1 : 2 : 4 amino-naphthol-sulphonic acid instead of stannous chloride. In the stannous chloride procedure, the phosphate containing solution after digestion is treated with molybdic acid, whereby phosphomolybdic acid is formed from the inorganic phosphate, and on addition of suitable reducing agents, molybdic acid is selectively reduced to yield a deep blue colour (Molybdenum Blue). In the method of Fiske and Subbarow, (1925) which is a modification of the method of Youngburg, 1 : 2 : 4 amino-naphthol-sulphonic acid is used as a reducing agent, and the reaction carried out at room temperature. Stannous chloride has got the advantage over amino-naphthol-sulphonic acid that the stock reagent is quite stable, and the colour produced with phosphomolybdate is more intense, thus permitting the estimation of smaller amounts of phosphorus. Shinowera *et al* (1942) have also found similar advantage.

Method.—18 cc of alcohol-ether mixture (1 : 1) were transferred to a test tube graduated at 20 cc. 1 cc of plasma was dropped slowly while shaking. The tube was put in a water bath and heated to boiling. It was cooled to room temperature and the volume made up to 20 cc. with alcohol other mixture. It was shaken and filtered. 4 cc. of the filtrate were transferred to a digestion tube marked at 10 cc. A small silica pebble was put in and the liquid. evaporated to dryness. 0.5 cc. of 10-N sulphuric acid was added to the tube and digested over an electric hot plate. Then 30 per cent hydrogen peroxide was added drop by drop and heated till the solution became clear. 2cc. water were added and heated to boiling. 4 cc. of water and 2 cc. molybdic sulphuric acid reagent B (50 cc. of 7.5 per cent sodium molybdate, P free, 25 cc. water and 25 cc. 1 ON. sulphuric acid were added. In another tube, 2 cc. of standard phosphate solution, about 4 cc. water and 2 cc. molybdic sulphuric acid reagent

TABLE

No. of cases	Range mg%	Mean mg%	S.D mg%	Comparative standard	
				Hawk mg%	Harrison mg
20 males	9.8 to 12	10.810±0.189	0.823±0.133	9 to 10	6.8 to 14

A (50 cc. of 7.5 per cent sodium molybdate, P. free. 50 cc. 10. N sulphuric acid were added. To each tube, 1 cc. dilute stannous chloride was added and diluted to mark with water, mixed quickly and after one minute, compared in a colorimeter.

Results

The lipid phosphorus was estimated in 20 apparently healthy males of the age group 20 to 30 years. Our results as compared to other workers is given in the table.

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HYPERTENSION : A NEW ("INFORMATIVE") METHOD FOR ITS EVALUATION, STUDY AND FOLLOW-UP

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IN spite of the high incidence and universal prevalence of high blood pressure or hypertension, the present-day methods of recording, measuring and grouping of such cases, remain far from satisfactory.

Although useful, these methods are not sufficiently informative or expressive and hence, leave room for further elaboration or modification.

The present paper deals with a new method of recording and follow-up of hypertensive cases, which after considerable deliberation, has been advantageously adopted in the cardiovascular department of the King Edward Memorial Hospital, Bombay.

Hypertension : Its Definition

The present-day nomenclature of hypertension and allied states is, in my opinion, in urgent need of revision. The word "hypertension" has been grossly misused in the medical literature of the past to represent, a symptom, or sign or even a disease-entity.

"Hypertension" a word which literally means a raised pressure and implies no associated symptoms, signs or pathological manifestations, should be defined as an exaggeration or perversion of the normal, physiological or biological phenomenon of "lateral pressure of blood on vessel-walls" (Hērndon, 1946), and no more. Its existence is often suspected clinically but usually proved instrumentally, with the aid of sphygmomanometry.

When hypertension is accompanied by demonstrable pathological involvement anywhere in the body, *e.g.* in the heart, kidneys, blood-vessels, or brain, then the condition or disease process should, by contrast, be referred to as "hypertensive disease".

In the event of preponderant pathological involvement of the heart, kidney, blood-vessels etc. suitable designations, such as hypertensive cardiovascular disease or cardio-angiopathy, hypertensive renal disease or nephropathy and hypertensive vascular disease or angiopathy, may be advantageously employed.

Furthermore, in accordance with the above contention, it is better to replace the commonly employed but unscientific designations of essential hypertension, primary hypertension, benign hypertension, and malignant hypertension, by the more suitable designations of essential hypertensive disease, primary hypertensive disease, the bengin phase of primary hypertensive disease and the malignant phase of primary hypertensive disease, respectively.

In view of the dreadful clinical implication of the word, it is perhaps better to abandon the word "malignant" altogether, and classify cases of primary hypertensive disease, according to the ophthalmoscopic criteria of Wagener and