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Departamento de Investigación
Hospital Municipal de Infecciosos
Barcelona (Spain)

Differentiation by amino-N index of normal and pathological human gamma globulin

J. Gras

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The quantitative variations of the different plasma protein fractions in pathological sera have been exhaustively examined. A further development should be the knowledge of the qualitative changes of these fractions comparatively to the normal ones.

With this idea we have made an investigation about the variations of the amino N index of gamma globulin of normal and pathological human sera. This globulin has been obtained by precipitation with sodium thiosulphate, in accordance to our method which makes possible the obtention of solutions with more than 90 % of purity in a first precipitation. These solutions have been controled by paper electrophoresis.

The index has been determined by formol titration of Soerensen and expressed as ml. of O,01 N NaOH by g. of gamma globulin. This technical approach may be subject to criticism but we have adopted it in a first approximation to test the possibility of finding differences between normal and pathological gamma globulin from a physiopathological point of view more than from a physicochemical one.

In total we have examined 212 gamma globulins from different individuals or the same in different bleedings. In table I we show the results distributed in 8 groups, corresponding to normal and pathological processes from which we have a convenient number of examinations.

These results seen make possible to differentiate chemically

gamma globulin of various pathological processes, giving an index of changes on chemical characteristics of this globulin which is not parallel to its electrophoretical homogeneity (see table 1 the corresponding values in cases of liver cirrhosis and

TABLE I

Amino N-index of gamma globulin from normal and pathological human sera

	N. pat.	N. det.	Average	Range
Neoplastic diseases	9	13	21.0	32.5 - 11.6
Infectious diseases	18	35	24.9	46.3 - 7.3
Normals	28	52	25.5	37.0 - 14.5
Cirrhosis of the liver	29	45	25.8	30.0 - 16.6
Rheumatic fever	7	8	27.5	31.4 - 21.6
Plasmocitoma	3	4	31.7	34.1 - 28.0
Rheum. Arthritis	12	23	33.8	39.3 - 23.5
Nephritis	13	18	34.2	50.1 - 15.8

plasmacitoma). It may be of interest in the clinical diagnosis and in physiopathology as a further factor of the possible ethiopatogeny of diseases with autoantibodies (nephritis, Rh. arthritis).

(*) The technical details and first results were published in *Rev. Esp. Fisiología* 10 : 267, 274, 1954. A more elaborated development will be published later.