

Rh Antibodies in Human Sera : a New Variety

Human sera containing several varieties of Rh antibodies have been described¹. These may be distinguished one from another by their reactions with Rh-positive cells, particularly with the rare types Rh' and Rh". The reactions are shown below.

Serum	Cells			
	Rh ₁	Rh ₂	Rh'	Rh"
Anti-Rh	+	+	-	-
Anti-Rh'	+	+	+	-
Anti-Rh"	+	+	-	+
Anti-Rh ₁	+	-	+	-
Anti-Rh ₂	-	+	-	+
Serum-Hi	+	+	+	+

The sera anti-Rh' and anti-Rh", confirming previous work, have been shown to contain two agglutinins: anti-Rh and anti-Rh₁ in the former case, and anti-Rh and anti-Rh₂ in the latter. Each individual anti-Rh' or anti-Rh" serum varies in its content of component agglutinins. In many cases the relative strengths of these agglutinins may be judged by titration of the original serum with the cell types shown in the table.

A maternal serum (Hi in table) was studied which reacted with nearly all Rh-positive cells. This mother had given birth to three children but none had survived. The mother was Rh-negative and the father subtype Rh₂.

Absorption of this serum with certain Rh-positive cells has shown that it contains three agglutinins, anti-Rh, and two others resembling in their activity anti-Rh₁ and anti-Rh₂. The paternal genotype is unknown but it may be Rh₀Rh₂, and the immunizing effect of foetal erythrocytes of genotype Rh₀rh may be responsible for the appearance in this maternal blood of the agglutinins which react with Rh' cells. This is supported by the fact that anti-Rh' agglutinins have been found in the serum of a mother, Group Rh", whose child, genotype Rh₀Rh", was affected with hæmolytic disease.

The serum Hi reacts very strongly with cells of genotype Rh'Rh". This genotype has been seen four times, twice in siblings.

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¹ Wiener, A. S., *Proc. Soc. Exp. Biol. Med.*, 54, 316 (1943).

Sulphur-containing Amino-Acids and Jaundice

In connexion with part of the recent note of Beattie and Marshall¹, which may give the impression that methionine has a strikingly beneficial effect upon patients suffering from so-called "post-arsphenamine" jaundice, we feel that the time has arrived to report very briefly some of our own results in a trial on similar lines started by us more than a year ago. Promise of its success was indicated by the literature; and it was felt that every therapeutic possibility should be explored in view of the high incidence of this serious complication.

More than 450 cases have now been studied, and

the progress of individual cases has been judged both clinically and by determination of the rate of fall of the serum bilirubin level. Of these cases, more than three hundred had to be excluded from the present analysis because the jaundice was too slight or too long established for satisfactory demonstration of a therapeutic effect. The ultimate assessment has been confined therefore to the hundred and fifty most severe cases coming under observation early in the disease. Some of these were treated with cysteine (as the ester hydrochloride), 2 gm. daily, some with methionine, 2.5 gm. or 5 gm. daily, and some with casein, 60 gm. daily. Throughout the trial an appropriate proportion of cases was set aside as controls. All patients were kept in bed, and received the same diet. There were 57 controls, 41 cases treated with cysteine, 33 with methionine, and 19 with casein. A brief summary of the results is set out in the accompanying table.

	Total no. cases	Mean no. of days for serum bilirubin to fall below 4 mgm. %, with no subsequent exacerbation, counted from the onset of jaundice
Control	57	25.8
Casein	19	32.9
Cysteine	41	21.3
Methionine	33	19.7

PERCENTAGE OF CASES IN WHICH THE SERUM BILIRUBIN FELL TO BELOW 4 MGm. %, WITH NO SUBSEQUENT EXACERBATION, IN THE PERIODS STATED, COUNTED FROM THE ONSET OF JAUNDICE.

	Less than 14 days	14-20 days	21-27 days	More than 27 days	% down in under 3 weeks
Control	10	23.5	29.5	37	33.5
Casein	10.5	26	10.5	52	36.5
Cysteine	12	51	12	24	63
Methionine	22.5	48.5	22.5	6.5	71

The results given in the table have been examined statistically; they show that both cysteine and methionine had a significant but not remarkable effect on the course of the jaundice. These findings confirmed the clinical impression that the benefit, although definite, was not sensational under the conditions of these tests. The casein had no action. In view of the known methionine content of the latter, it is surprising that no effect was obtained, and it is hoped that further work will provide an explanation of the apparent discrepancy. A full report of this work is now being prepared for publication.

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¹ NATURE, 153, 525 (1944).