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Effect of Acetyl Salicylic Acid on Sedimentation Rate of Erythrocytes in Rheumatic Fever.

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Since it is a generally accepted fact that salicyl therapy lowers the temperature and the leucocyte count of patients with acute rheumatic fever, it is our policy to rely on the sedimentation rate of erythrocytes as the best index of disease activity. Only when this returns to normal is the rheumatic infection considered quiescent. Prior to 1940, salicyl therapy was often continued for several weeks after the sedimentation rate became normal, but recently the drug has been discontinued as soon as a normal rate was obtained, assuming that rheumatic activity had then ceased. To our surprise the sedimentation rate in several cases became appreciably elevated during the first week after stopping medication. This was occasionally associated with an elevation of temperature, the return of symptoms, or both. In a few of the cases receiving second or third courses of the drug, the same phenomenon was observed.

The hospital course of 7 patients showing this type of reaction is presented in condensed form in Table I. Each child had acute rheumatic fever, and all except J.S. showed definite cardiac involvement. The rates were determined at approximately weekly intervals

TABLE I.
Effect of Acetyl Salicylic Acid on the Sedimentation Rate.

Patient Age (years), Sex	J.S. 11, M	E.G. 6, M	B.P. 10, F	R.R. 10, M	G.S. 14, M	W.M. 11, M	G.G. 12, M
Previous attacks	0	0	0	4	2	Several	Several
Dosage (g/day)	2.6	2.6	4.0	3.2	2.6	4	3.2
Duration of treatment (days)	28	14	28	14	9	42	21
Sedimentation rate before and after therapy (mm/min)	1.0-0.2	1.3-0.3	1.8-0.7*	1.1-0.2	0.6-0.2	1.7-0.2	1.5-0.3
Interval between last dose of drug and subsequent determination of rate (days)	4	6	5	6	4	3	3
First sedimentation rate after above interval	1.5	0.6	1.7	0.8	0.5	0.6	0.6
Repetition of phenomenon	2 x	0	2 x	1 x	0	0	0

*Drug discontinued before normal rate was obtained.

using the Rourke-Ernstene[1] technic. This method has been used for several years and has always given apparently consistent and reliable results in the rheumatic patients. Salicyl was administered by mouth in the form of acetyl salicylic acid combined with sodium bicarbonate. The celerity with which the "rise" occurred after discontinuing the drug suggests that this salicyl compound may have the ability to lower the sedimentation rate as well as the temperature and the leucocyte count in this disease.

In seeking an explanation of this reaction, the studies of Bendien, Newberg and Snapper[2] appeared to be pertinent. These authors noted that when sodium salicylate is added to human blood *in vitro,* the erythrocyte sedimentation rate is greatly reduced. In a few preliminary experiments, we have been able to confirm their findings, but the minimal effective concentration of sodium salicylate, using this method, is 90-120 mg %. This represents at least 3 times the value given by Hanzlik[3] as an average blood level obtainable in rheumatic patients.

Further studies are in progress to learn the true mechanism and the significance of this phenomenon.

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Pigment of Anthracosis.

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Black pigment of the human lung, from the time of its earliest observation, was considered to be a collection of coal particles. Pearson in England first applied the term anthracosis in 1813. In Germany, on the contrary, this view was combatted and as late as 1855 Barthelmess discussed the condition as "pulmonary melanosis" and thought it was the result of hemorrhage and inflammation. By 1867 there was general agreement that the pigment was inhaled coal or soot. Klotz[1] has reviewed the subject. No modification of

[1] Rourke, M. D., and Ernstene, A. C., *J. Clin. Invest.,* 1930, **8**, 545.

[2] Bendien, W. M., Newberg, J., and Snapper, I., *Biochem. Z.,* 1932, **247**, 306.

[3] Hanzlik, P. J., *Medicine,* 1926, **5**, 197.

[1] Klotz, O., *Am. J. Pub. Health,* 1914, **4**, 887.