

## ROSE - WAALER TEST IN SYPHILIS

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## Summary

Rheumatoid factor was found to be positive in significant titres in 13 out of 20 cases suffering from various stages of syphilis. The significance of this observation, in the light of another auto antibody, i. e., reagin occurring in syphilis is discussed.

Two types of antibodies are known to be elaborated in syphilis. The first one, a nonspecific antibody called reagin, reacts with cardiolipin. The second antibody is specific and is detected by various treponemal tests. Apart from these two, there is very little work at present, regarding other types of antibodies, which are likely to be elicited in syphilis. The present work has been carried out to detect the presence of rheumatoid factor in syphilis.

## Materials and methods

The method used to titrate the rheumatoid factor is Rose-Waaler test. Titres upto DAT 16 is considered normal. In 8 normal subjects and 20 patients different stages of syphilis were investigated.

## Observations

The results of Rose-Waaler VDRL tests in the normals and syphilitic patients are given in tables 1 and 2 respectively. In all normal subjects the Rose-Waaler titres were less than DAT 16. In 3 patients with primary syphilis, VDRL was reactive one in two dilutions. In two of these individu-

TABLE 1  
Rose-Waaler Test in Normal Subjects

S. No.	Sex	Age	VDRL	Rose-Waaler
1	M	22	— ve	DAT 16
2	M	30	-do-	16
3	M	35	-do-	2
4	M	30	-do-	1
5	F	32	-do-	1
6	F	18	-do-	8
7	M	22	-do-	4
8	F	24	-do-	1

als, Rose-Waaler test showed normal results. One patient in whom VDRL was nonreactive, Rose-Waaler test was positive in high titres. Rose-Waaler test was strongly positive in 10 out of 14 cases with secondary syphilis. In two cases with late syphilis, though VDRL was only weakly reactive, the Rose-waaler test was strongly positive, and one of them showed very high titres. In one case of congenital syphilis VDRL was nonreactive and Rose-waaler titres normal. No correlation could be drawn between Rose-waaler titres and stages of syphilis, though it could be said roughly, that the titres rose as the disease progressed. Likewise there was no exact correlation between VDRL and Rose-waaler titres.

## Discussion

The events leading to the formation of rheumatoid factor are beautifully

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Received for publication on 11-8-1977

reviewed by Hirose et al<sup>1</sup>. In rheumatoid arthritis, antibodies are produced to tissue globulins. The resulting antigen-antibody complex acts as an antigen, eliciting the production of rheumatoid factor. This is a macroglobulin and occurs in Ig G and Ig M fractions of immunoglobulins.

TABLE 2  
Rose-Waaler Test in Syphilitic Patients

Age	Sex	Stage	VDRL	D.G.	Rose-Waaler test
25	M	Sy-I	Negative	+ve	DAT 256
30	M	-do-	1:4	+ve	16
23	F	-do-	1:4	+ve	16
26	M	Sy-II	1:32		128
30	M	-do-	1:16		64
30	F	-do-	1:8		32
20	F	-do-	1:64		18
25	M	-do-	1:8		1
25	M	-do-	1:64		256
20	F	-do-	1:64		4
25	M	-do-	1:64		8
22	F	-do-	1:64		256
20	M	-do-	1:64		128
20	M	-do-	1:32		64
19	M	-do-	1:16		16
19	M	-do-	1:64		128
21	M	-do-	1:64		64
25	M	Tertiary syphilis	1:4		64
20	F	-do-	1:2		1024
8	M	Congenital syphilis	Negative		16

As regards the origin of reagin, there are differing views - a. that it is produced in response to the slimy layer on the treponemes, provided by the host<sup>2</sup> and - b. that it is an antibody produced in response to a combination of treponemes and products of inflammation<sup>3</sup>. The reagin also is a macroglobulin occurring in Ig G and Ig M fractions of immunoglobulins.

Thus both rheumatoid factor and reagin are auto antibodies and occur in the same immunoglobulin fractions.

Two types of relative immunity are described in syphilis. First one is a tissue immunity. Various aspects of this immunity have been well detailed by Magnuson and his associates<sup>4</sup>. The second one is humoral immunity. This is said to be furnished by treponemal antibodies<sup>5</sup>. Apart from these two, it appears that auto antibodies also may play a part in the aetiopathogenesis of syphilis.

### Conclusion

Rose-Waaler test for rheumatoid factor was conducted in 20 patients with syphilis. It was found to be positive in significant titres in 13 of them.

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