

The Role of Syphilis Serology on Day of Treatment

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Background/Purpose:

We examined the progression in reactive plasma regain (RPR) titre from the day of syphilis diagnosis to the day of syphilis treatment to determine when a repeat RPR test should be recommended.

Approach:

We undertook a retrospective study between 2011 and 2020 at a sexual health clinic in Melbourne Australia among individuals who received syphilis serology on the day of diagnosis and then treatment up to 14 days later. We grouped individuals by the number of days between diagnosis and treatment and measured the fold change in RPR titre. We measured the percentage with a four-fold or greater RPR change. We compared the percentage of cases with 4-fold or more difference in RPR titre between 4 Syphilis stages: Primary, Secondary, Early Latent and Late Latent.

Outcomes/Impact:

Between 2011 and 2020, there were 766 individuals (732 men, 23 women and 11 transsexuals or other genders) with syphilis who received syphilis serology on the day of diagnosis and treatment within 14 days. The median number of days between diagnosis and treatment was 6 (Interquartile range (IQR) 5-7). Of the 766 cases, 14.8% ($n=113$) had a 4-fold or more change in RPR titre between the day of diagnosis and treatment. The number of cases with a 4-fold or more change in RPR titre increased with increasing number of days between the day of diagnosis and treatment, i.e., 4.1% ($n=6$) within 1-3 days after diagnosis to 25.7% ($n=27$) with 10-14 days after diagnosis ($p_{\text{trend}} < 0.0001$). There was no significant difference in number of cases with a 4-fold change in RPR between syphilis stages ($p=0.37$).

Innovation and Significance:

This is the first published data on changes in the RPR titre between diagnosis and treatment and support the recommendation of repeating the RPR titre if the day of diagnosis and treatment are different.

Disclosure of Interest: *Nothing to Disclose*