Cost efficacy savings on serological follow up for syphilis at an urban sexual health clinic

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Background

General Practitioners (GPs) in Lothian, Edinburgh are currently requesting syphilis serology in 65% of individuals being tested for HIV. Adding syphilis serology to the remaining 35% would add significant cost, around £7000 per annum.
At the **Edinburgh** centre full serology for syphilis (IgG, RPR, TPPA, IgM) is performed on all those with a previous syphilis diagnosis. We also provide lifelong **6 monthly monitoring of people living with HIV**. Many of these individuals have had prior syphilis and therefore all four tests are repeated on each occasion, a very labour intensive process. Many of these individuals are not at ongoing risk of infection.
The **Edinburgh** protocol also recommends **following up** patients with positive serology as follows: Early: 1/3/6/12 months, 6 monthly until RPR serofast. Late: 6 monthly until serofast. These patients receive **all four serological syphilis tests** on each occasion.
BASHH 2015 Syphilis Guidelines recommends lifelong **annual** monitoring for **people living with HIV** and also recommends **RPR follow up** 3/6/12 months, 6 monthly until RPR serofast[1].
The aim of this audit was to evaluate if full serological screening follow up was necessary and appropriate for all our patients. A further aim was to assess whether any cost savings could be made in order for GPs to test more patients.

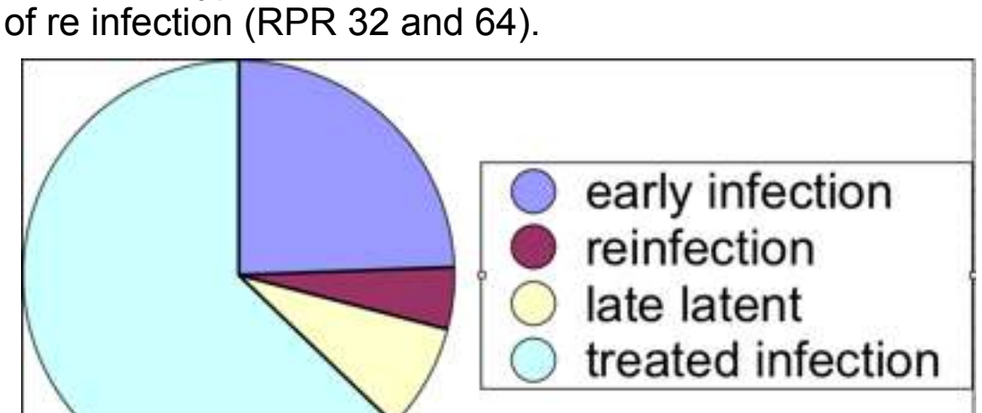
Methods

One hundred individuals with full serological testing for syphilis between 30/9/15 and 29/10/15 were surveyed. Age, risk group, HIV status, stage of infection, treatment received, symptoms at presentation, follow up and on going infection risks were collated. Results for contacts of syphilis, those treated epidemiologically and results of treponemal PCR (when taken) were collected.

Results

Age range was 20-77 years. Eighty eight per cent were male, 12 female. Seventeen individuals were heterosexual (12 false positive), 83 MSM (1 false positive).
Twenty one individuals had evidence of early infection (all positive RPR), 4 re infection (all rise in RPR), 7 late latent infection and 54 results in keeping with treated infection (Chart 1).
Twelve patients were symptomatic of syphilis.
Three female patients presented as contacts of syphilis.
Those with false positive results were omitted from further analysis.
Forty seven (**54%**) were **living with HIV**. Of these 23 (48%) had no documented ongoing risks for syphilis acquisition and 16 (34%) had ongoing risks but a longstanding RPR 0. When symptoms and previous testing were taken into account, 4 had early syphilis (2 PCR positive), 2 re infection, 2 late latent infection.
Forty (**46%**) were **HIV negative**. Of these 16 (40%) were MSM with previously treated syphilis, and a longstanding RPR 0. Seventeen (42.5%) had early syphilis (16 MSM, 1 female, 3 PCR positive) and were being monitored as follow up. Five (12.5%) had serology suggestive of late latent syphilis, with RPR 0 at treatment. Two MSM had evidence of re infection (RPR 32 and 64).

Chart 1: Stages of syphilis infection in those tested with all four serological syphilis tests



Discussion

The recommendation was made that in individuals living with HIV with previously treated syphilis, RPR alone would be sufficient for monitoring. This was reinforced by the fact that all with reinfection would have been picked up on RPR alone.
In the HIV negative group most had ongoing risks but a longstanding RPR 0. Consideration should be given to monitoring with RPR only in this group also. Again this is supported by the fact that of those with re infection, all would have been picked up with RPR alone.
There was discussion regarding these recommendations and it was decided that it would be difficult to implement different testing protocols based on risk assessment and previous syphilis treatment.
There were concerns that monitoring RPR only may miss prozone in some individuals.
However, there was agreement that IgM should no longer be routinely performed. This is £3.77/test therefore approximately £377/month will be saved in this group alone. As this will also apply to all other testing performed on those with a history of previous syphilis, there will be considerable cost savings to the service. IgM serological testing for syphilis is currently performed in around 10% of laboratories within the UK[3].
The audit showed that 13% of results were false positives. It was agreed that these all require full serological follow up 2 weeks following initial testing. The Edinburgh laboratories reported that a new IgG test is being introduced (Abbott TP) which may lead to a decreased number of false positive results.
Summary: All early syphilis, re infection and contacts of syphilis continue to require full serological follow up and full serology is required to assess response to treatment, especially as follow up success varies. It was felt that 1 month and 1 year follow up should be particularly emphasised. However, RPR alone is sufficient for screening for re infection in those with a history of previously treated syphilis.

References

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