

## TEACHING FILE

## GRAND ROUNDS

Ira Shah

**POSITIVE TUBERCULIN AND QUANTIFERON GOLD TEST**

**Case:-** A 7 years old boy presented with dry cough for 1 month which subsided since last one week. There is no fever, loss of appetite or loss of weight. There is contact with a neighbor who is suffering from tuberculosis. The physician did a mantoux test which was 23 x 20 mm. Chest X-Ray was normal and ESR was 5 mm at end of 1 hour. Quantiferon gold test was also positive.

**What is the diagnosis?**

**Expert's opinion:-** This child is currently asymptomatic. His mantoux test is positive suggestive of delayed hypersensitivity reaction to tubercular protein. However, this could be due to BCG or due to past infection with TB or even atypical mycobacterial infection. It does not tell us whether child is infected with M.TB recently. Thus, in this child we do not know whether he is recently infected with TB or had a past TB infection. Chances of developing active TB disease are highest in the first 2 years of acquiring TB infection and in children less than 5 years of age. Thus, prophylaxis is needed in children less than 5 years with latent TB or those who have acquired TB infection recently. To determine whether this child has acquired infection recently or in the past, one can do Interferon gamma release assays (IGRAs) which are in-vitro tests that work of the same principle of Mantoux test except that they will be positive only with recent TB infection since they do not depend on memory cells. IGRAs are negative with past TB infection and will not be false positive due to BCG. This child has both Mantoux tests and Quantiferon gold test positive suggestive of recent latent TB infection (LTBI).

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**POSTERIOR CERVICAL ADENOPATHY**

**Case:** - A 12 years old girl presented with recurrent bilateral posterior cervical adenopathy 5 mm in size, mobile, non tender since past 5 years. There is no otorrhoea, recurrent cough, cold or dental caries. Her mantoux test was done which was 25 mm. Chest X-Ray was normal.

**Should this child be treated with anti-tuberculous therapy?**

**Expert's opinion:** This child has non-matted lymph nodes that wax and wane in size over a period of 5 years. Hence they are unlikely to be tuberculosis. Mantoux test does not tell us whether this child currently has active TB. It only states that child is either exposed to TB bacillus in the past or has received BCG or has been exposed to atypical mycobacteria.

These nodes are in the posterior cervical region. Common causes of posterior cervical adenopathy are

dental caries, ear infection or head lice. In this child, she was detected to have head lice. Treatment of head lice led to resolution of the cervical nodes.

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**NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR COMBINATIONS**

**Case Report:-** A 12 years old HIV infected orphan was referred for further management. Both parents were also HIV infected and had died due to same. At 3 years, the child had PCP pneumonia. At 4 years, he was treated for pulmonary tuberculosis (TB). At 6 years, he had herpes zoster ophthalmicus and molluscum contagiosum. At that time, he was treated with 2 drug antiretroviral therapy (ART) consisting of zidovudine (AZT) and lamivudine (3TC). At 6½ years of age, 2 more drugs – stavudine (d4t) and nevirapine (NVP) were added. At that time mantoux was done which was positive and child was retreated with antituberculous therapy (ATT). At 11½ years of age, his CD4 count was 138 (19.6%) and HIV viral load was 294,337copies/ml. He was shifted to abacavir (ABC), didanosine (ddI) and lopinavir-ritonavir (LPVr). At 12 years, his viral load was 452 copies/ml and CD4 count was 542 cells/cumm.

**Is the present regime likely to work?**

**Expert's opinion:** This child has been on multiple NRTI from the age of 6 years, initially 2 drugs and then stavudine with zidovudine which are not to be given together. It is quite likely that the child has developed resistance to the nucleoside reverse transcriptase inhibitors (NRTIs) in form of thymidine analog mutations (TAMs) which may cause resistance to other NRTI group. Thus though the child is now on a protease inhibitor (LPVr), whether abacavir and didanosine will work or not is not known. Six months after starting this combination, the viral load has decreased significantly (452 copies/ml) and thus it would need a close monitoring. Ideally a viral resistance testing should be done in this child since there are still viral copies present in the blood. Also there have been reports that ABC and ddI together can cause increased risk of heart disease.

**From:** Medical Sciences Department, Pediatric Oncall, Mumbai.

**Address for Correspondence** Dr Ira Shah, 1/B Saguna, 271, B St Francis Road, Vile Parle (W), Mumbai 400056.

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