

Is Annual Tuberculin Test Appropriate For All HIV-infected Patients?

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Background:

It has been recommended that regular tuberculin skin tests (TST) be done for all HIV-infected patients. However, the optimal frequency of such is unknown.

Methods:

Annual TSTs were placed for all patients of an HIV clinic in a TB-endemic region. Those with latent infection were treated with isoniazid.

Results:

From Jan 2003 to Oct 2009, 845 patients received annual TST screening according to clinic protocol. Those who tested positive were investigated for active disease and isoniazid prescribed for those with latent infection. Seventy-eight (9.2%) tested positive. Their median baseline CD4 and viral load were comparable to those who tested negative (CD4 281 vs 267 cells/mm³, P=0.425; viral load 22,000 vs 39,000 copies/ml, P=0.071).

Of those who tested positive, two (2.5%) subsequently developed TB disease, after isoniazid treatment but were not on antiretrovirals at time of TB. Of 767 patients with consistently negative TSTs, 14 developed TB disease at a mean of 288 days after the first negative TST. Compared with those who did not develop TB, they had a lower baseline CD4 count (93 vs 269 cells/mm³, P=0.046), higher baseline viral load (275,000 vs 37,000 copies/ml, P=0.002) and higher likelihood of history of AIDS-defining illness (43% vs 1%, P<0.0001). Eight (57%) developed TB within 4 months (median 2.5 months) after the last negative TST, and the rest at a median of 12 months. Those with negative TSTs and no TB disease were followed for a mean of 953 days.

Conclusions:

Certain patient characteristics may be identifiable that determine the optimal frequency of TST, which can range from every 2.5 months to 2.5 years.

	TST +ve (n=78)		TST -ve (n=767)		P value
	Median (Range)		Median (Range)		
CD4 at 1st TST in cells/mm ³	281	(1 - 1400)	267	(0 - 1630)	0.425 A
VL at 1st TST in copies/ml	22000	(<400 - 5.7x10 ⁵)	39000	(<400 - 5.3x10 ⁵)	0.071 A
Mean (SD) FU Duration in Days	934	(511.7)	941	(682.7)	0.930 C
Sex	With TB (n=14)		Without TB (n=753)		0.696 B
	M (%)	13 (93%)	644 (86%)		
Age in Years	41	(11.4)	38	(10.9)	0.264 C
CD4 at 1st TST in cells/mm ³	93	(0 - 816)	269	(1-1630)	0.046* A
VL at 1st TST in copies/ml	275000	(4600 - 1.3x10 ⁶)	37000	(<400 - 5.3x10 ⁵)	0.002* A
Presence of AIDS- defining illness	6	(43%)	8	(1%)	<0.001* B
On HAART at cut off	6	(43%)	490	(65%)	0.905 B
Mean Days on HAART (SD)	117	(133.6)	1214	(1151.4)	0.020* C
Mean (SD) FU Duration in Days	288	(423.2)	953	(680.7)	0.001* C

A By Mann-Whitney
B By Chi-square test
C By T-test

Abbreviation
TST = tuberculin skin test
VL = viral load
HAART = highly active antiretroviral therapy

