Prevalence of latent tuberculosis infection in HIV-positive patients in a Dutch outpatient clinic

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Abstract

HIV infection increases the risk of re-activation of latent tuberculosis infection (LTBI). We screened our HIV-positive outpatients for LTBC. In multivariate regression analysis African origin was associated with LTBI. Further, 10 patients without any risk factor were diagnosed with LTBI. About 40 patients without risk factor needed to screened to diagnose 1 patient with LTBI. Our data show that it is worthwhile to screen all HIV-positive patients for LTBI.

Background

HIV infection increases the risk of re-activation of latent tuberculosis infection (LTBI) [1]. Therefore, the Infectious Diseases Society of America (IDSA) advises to screen for LTBI at the time of HIV diagnosis [2]. However, it remains unsolved whether this advice is useful for countries with a very low prevalence of LTBI, such as the Netherlands.

Methods

In 2016 we started to screen every HIV-positive patient for LTBI using the interferon gamma release assay (IGRA) in the outpatient clinic of Rijnstate Hospital, Arnhem. Clinical data were collected from patients files and from *Stichting HIV monitoring* (SHM). Proportions between groups were compared. A logistic regression was performed to determine independent risk factors for latent tuberculosis in HIV-positive patients. We used sex, origin, IV drug use and diabetes mellitus as risk factors in this analysis.

Results

Table 1.
IGRA results in HIV-positive patients

	Total	IGRA negative (%)	IGRA positive (%)
Total Population	599	570 (95.2)	29 (4.8)
Gender			
Male	496	479 (96.6)	17 (3.4)
Female	103	91 (88.3)	12 (11.7)
Origin			
Western	461	449 (97.4)	12 (2.6)
African	71	59 (83.1)	12 (16.9)
Other	67	62 (92.5)	5 (7.5)
CD4 count	648	652	563
IV Drug Use	13	12 (92.3)	1 (7.7)
Diabetes Mellitus	29	27 (93.1)	2 (6.9)
Past TBC Treatment	11	7 (63.6)	4 (36.4)

Table 2.
Logistic regression analysis of risk factors for latent tuberculosis in HIV-positive patients

	Odds ratio (95% CI)	p-value
Sex (female)	1.8 (0.8 – 4.4)	0.18
Origin		
African	6.1 (2.3 – 15.7)	<0.01
Other	2.6 (0.8 – 7.8)	0.10
IV Drug Use	2.7 (0.3 – 22.0)	0.37
Diabetes mellitus	1.5 (0.3 – 7.2)	0.60

Conclusion

In our cohort of HIV –positive patients:

- African origin is associated with latent tuberculosis
- Sex, iv drug use and diabetes mellitus are not associated with latent tuberculosis
- 10 patients without any risk factor were diagnosed with latent tuberculosis.
- To diagnose 1 patient about 40 patients without risk factor should be tested.
- It is worthwhile to screen all HIV-positive patients for LTBI

References

1. Horsburgh CR, Jr. Priorities for the treatment of latent tuberculosis infection in the United States. *N Engl J Med* 2004;350:2060-67

2. Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents. https://aidsinfo.nih.gov/guidelines

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