

An Evaluation of Latent TB Screening and Management at a Tertiary Referral Centre in the Republic of Ireland

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Introduction: Establishing systematic screening for latent tuberculosis infection (LTBI) is important for TB elimination. This requires prior risk group specific knowledge of the prevalence of LTBI and the cost of identifying LTBI. There is also a need to establish if and where patients with LTBI are being lost on the cascade of care from screening to treatment completion. Without this knowledge it is not possible to weight the cost-benefits of systematic screening in each risk group.

Aim:

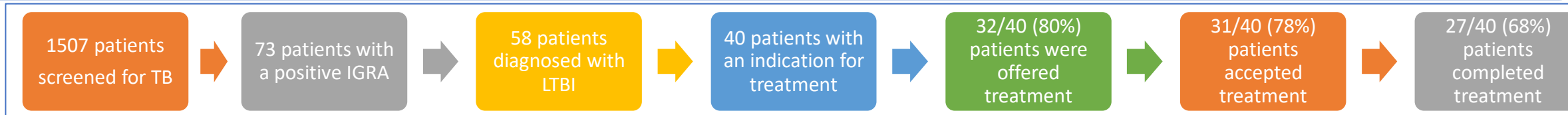
To evaluate the clinical and cost-effectiveness of LTBI screening using interferon-gamma release assay (IGRA) in our tertiary referral centre.

Methods:

We performed a retrospective review of patients who had an interferon-gamma release assay (IGRA) performed in Beaumont Hospital between 2016 and 2018. We extracted their nationality, indication for screening and outcome of screening from their healthcare record.

Results: The cascade of TB screening using IGRA in our centre is shown in Figure 1. 1215/1507 (81%) patients had an IGRA performed to screen for LTBI, 270/1507 (18%) were during an investigation for active TB and for 22/1507 (1%) patients the indication was unknown. Patients who were non-Irish were significantly more likely to have LTBI compared with patients who were Irish (8.7% vs. 3.5%, odds ratio (OR) 2.6, 95% CI 1.3-5.0, P<0.001). Patients who were non-Irish were more likely to have a diagnosis of active TB made compared with patients who were Irish (10/149 (6.7%) vs. 13/1318 (1%), OR 7.2, 95% CI 3.1-16.8, P<0.001).

Figure 1: Cascade of LTBI care



7/8 (87.5%) patients with LTBI and an indication for treatment who were not offered treatment were non-Irish nationals. There was a significant association between being a non-Irish national with LTBI and an indication for treatment and not being offered treatment (7/12 (58.3%) vs 1/46 (2.2%) (χ^2 (1, N = 58) = 25.24, P < .001)). The cost of screening per case of LTBI identified (n=58) was €2048 and the cost per case who went on to complete treatment (n=27) was €4400. The prevalence of LTBI in our cohort of 1507 patients was 4.3% (Table 1). Based on this, we estimate there are 211,625 (95% CI 162,410-275,604) people with LTBI among the 4,921,500 people in Ireland.

Table 1: Prevalence estimates of LTBI	Estimated prevalence of LTBI (all)	Estimated prevalence of LTBI (Irish nationals)	Estimated prevalence of LTBI (non-Irish nationals)
All	4.3% (95% CI 3.3-5.6%)	3.5% (95% CI 2.6-4.7%)	8.7% (95% CI 4.6-14.7%)
Screened prior to immunosuppressive treatment	3.1%, (95% CI 2.2-4.3%)	3.1% (95% CI 2.1-4.3%)	3.8% (95% CI 0.8-10.6%)
Investigated for but not diagnosed with active TB	7.9% (95% CI 4.9-12.0%)	5.8% (95% CI 3.0-9.9%)	17.8% (95% CI 8.0-32.0%)

Conclusion: The provider recommendation of treatment for LTBI needs to be improved, particularly for non-Irish nationals with LTBI who had a higher prevalence as compared with Irish nationals. At our centre, this is important to maximise the potential for TB disease prevention with the resources being expended to do so.