NHS
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The use of Interferon Gamma Release Assay (IGRA) testing for latent *Mycobacterium tuberculosis* prior to commencing immune-modulating drugs at the Royal Liverpool and Broadgreen University Hospital

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Introduction

- The risk of reactivation of latent tuberculosis in patients commencing TNF-α blockers has been well-established and there are clear recommendations on the screening and management of these patients.
- Currently clear guidance does not exist for testing prior to commencing other forms of immune-modulating drugs.
- The aim of this audit was to assess how IGRAs were being used prior to commencing immune-modulating drugs and how patients with positive results were being managed.

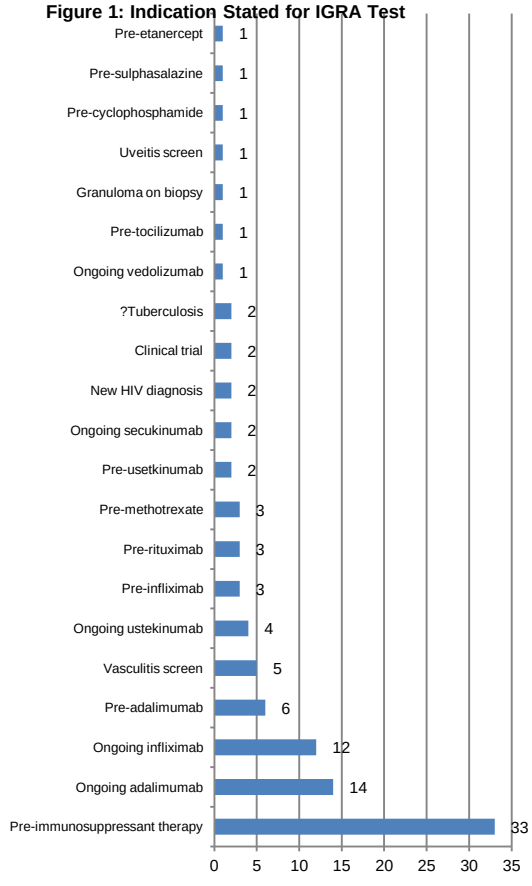
Methods

- Data was collected from all IGRA tests performed in 2017 at Royal Liverpool and Broadgreen University Hospitals. This amounted to 1155 tests, of which 37 were positive.
- 100 randomly selected results were analysed using electronic notes and ordering system to determine: indication, underlying diagnosis, demographic information, number of tests per patient and department ordering the test.
- The notes of patients with positive results were reviewed to ascertain if appropriate investigations had been carried out, whether infectious disease advice was sought, what treatment was provided and whether they completed treatment.

Results

- 46% of tests were ordered by the Dermatology department, 20% by Gastroenterology and 19% by Rheumatology. The rest were requested by renal, Ophthalmology, Clinical pharmacology, Infectious diseases, Haematology, ENT and GUM departments.
- 10% were requested prior to commencing an anti-TNF-α medication.
- 33% were requested prior to commencing immune-modulating medications whilst 33% were for requested because of ongoing immune-modulating medications (Figure 1).
- 39% of the tests were tests were requested on patients that had already been tested and the average number of tests per patient was 2
- We estimate that duplicate tests resulted in and additional annual cost of £14,869.
- Liver function tests were done following all 37 positive results however 6 did not have a chest x-ray .
- In 13 of the positive cases no advice was sought from the Infectious Diseases department regarding treatment
- Nine of the 23 patients referred to Infectious Diseases did not receive chemoprophylaxis due to the risk of hepatotoxicity and low-risk of immunosuppression. 3 patients were unable to complete treatment due to side-effects.

Figure 1: Indication Stated for IGRA Test



Discussion

- We found a surprisingly high number of IGRA tests being carried out for various reasons by Dermatology, Gastroenterology and Rheumatology departments
- Duplicate tests resulted in a substantial unnecessary cost
- There was room for improving management of patients with positive results
- A local guideline for latent *M. tuberculosis* testing has been developed. In addition the electronic process for requesting IGRA testing has been modified to include prompts about indications for requesting IGRA. All IGRA results are now also issued with a comment to help clinicians interpret the result.

Conclusion

- Multi-specialty reviews of the use of IGRA testing may reveal scope for improving clinical management and cost-savings
- Comprehensive national guidelines for use of IGRA prior to all forms of immunosuppressive therapy are required

Quantiferon result comment:
"POSITIVE: Suggests colonisation by live mycobacteria (most commonly M. tuberculosis, less frequently M. kansasii, M. szulgai, and M. marinum), but cannot differentiate latent from active infection.
INDETERMINATE: Test not interpretable. If the patient is immunosuppressed, this could explain the result.
NEGATIVE: Not suggestive of mycobacterial infection."

References:
•National Institute for Clinical Excellence NICE Guideline NG33: Tuberculosis (January 2016). Available at nice.org.uk/guidance/ng33
•National Institute for Clinical Excellence NICE Technology Appraisal : Adalimumab, etanercept, infliximab,rituximab and abatacept for the treatment of rheumatoid arthritis after the failure of a TNF inhibitor. Available at nice.org.uk/guidance/ta195