

Rituximab and Hepatitis B screening audit at a Tertiary Hospital

George Hills, Matthew Kennedy and Helena White

george.hills@uhl-tr.nhs.uk, matthew.kennedy@uhl-tr.nhs.uk, helena.white@uhl-tr.nhs.uk

Department of Infectious Diseases, HIV and Tropical Medicine, University Hospitals of Leicester NHS Trust, Leicester, UK



University Hospitals
of Leicester
NHS Trust

1. Background / Introduction

- Rituximab, a widely used immunosuppressant, is associated with an estimated 10% risk of hepatitis B (HBV) reactivation in patients with prior HBV infection.
- Therefore, guidelines recommend screening for both HBV surface antigen (HBsAg) and core antibody (anti-HBc) prior to therapy.^{1,2}
- Antivirals (usually entecavir) are recommended prophylactically for patients with evidence of previous hepatitis B exposure.
- Published audits demonstrate anti-HBc screening compliance of 78-84%.^{3,4}
- Triggered by a fatal case of hepatitis B reactivation and fulminant hepatitis, we aimed to assess adherence to current guidelines at our institution.

2. Methods

- We identified all rituximab prescriptions across a six month period in 2020 at our tertiary centre.
- Laboratory records were reviewed for hepatitis B markers prior to prescriptions.
- Electronic records of patients with positive screening results were reviewed to assess for appropriate management.
- Results of audit disseminated and changes implemented:
 - Locally written position statement distributed.
 - Guidance comments were added to positive HBV screening results by the virologists.
- Data collection and analysis was repeated in 2021.

3. Results

- 645 rituximab prescriptions were identified (detailed breakdown in table below):
 - 258 in 2020
 - 387 in 2021.
- 83% of patients were screened for anti-HBc in 2020, increasing to 92% in 2021.
- The 2020 audit identified five anti-HBc positive patients, (one also HBsAg positive):
 - All managed appropriately.
- In 2021, 15 patients were identified as anti-HBc positive (see chart opposite)

Clinical team	April-Sept 2020		April-Sept 2021	
	No. prescriptions	% checking anti-HBc	No. prescriptions	% checking anti-HBc
Haem	112	80 (90)	138	92 (127)
Rheum	95	88 (84)	191	92 (176)
Renal	24	83 (20)	34	97 (33)
Oncology	8	88 (7)	18	89 (16)
Paeds	6	33 (2)	2	100 (2)
Neuro	5	80 (4)	0	N/A
ITU	2	50 (1)	2	50 (1)
ENT	1	100 (1)	0	N/A
Gastro	1	100 (1)	2	100 (2)
Gen med	1	100 (1)	0	N/A
Acute med	1	0 (0)	0	N/A
Transplant	1	100 (1)	0	N/A
Thoracic	1	100 (1)	0	N/A
Total	258	83 (213)	387	92 (357)

Table 1: Summary of results for the two audit cycles across two years. Highlighted in green are the areas with particular improvement in screening practice. Areas highlighted in orange show areas where no change was observed. Importantly, there were no clinical areas where screening rates declined.

Anti-HBc positive patients, 2021

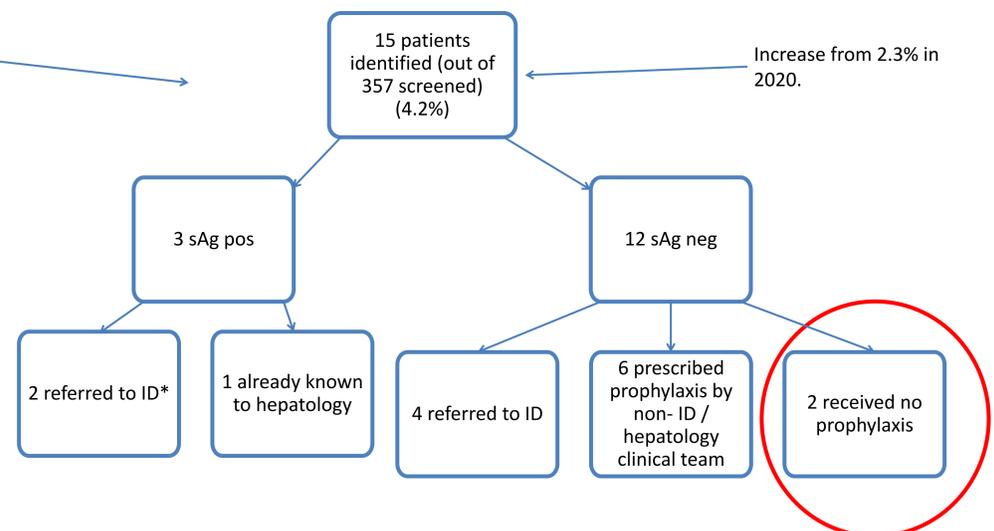
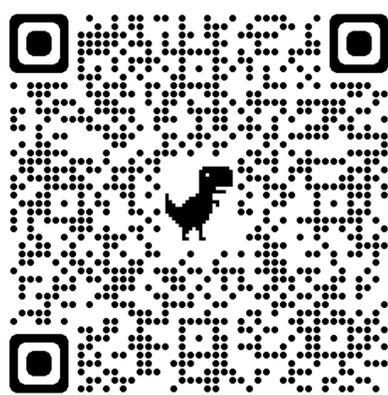


Chart 1: Summary of rituximab prescriptions where the patients had positive HBV markers on screening. 2/15 were inappropriately managed (red circle). The responsible clinical teams were informed and advice issued. In these cases prophylaxis had simply been overlooked as the screening tests had not been followed up appropriately. No patients came to any harm as a result of these omissions.
* ID = infectious diseases.



Scan me

Links to UK Chemotherapy Board position statement on HBV screening and reactivation prophylaxis for patients planned to receive immunosuppressive therapy.

4. Discussion and Conclusions

- We demonstrated a significant improvement in HBV screening before prescription of rituximab across our audit with our interventions:
 - Distribution of a locally written, simple position statement / guidance on which tests to send, and what to do with the results.
 - Addition of helpful guidance comments on positive anti-HBc screening results by the virology service.
- Room for improvement remains, particularly in managing anti-HBc positive patients.
- Conveniently the UK Chemotherapy Board issued a position statement on HBV screening and prophylaxis around the same time as our second audit cycle was completed (scan QR code to view).⁵
 - This was disseminated widely across specialties in our institution by us.

5. References

- National Institute for Health and Care Excellence. Hepatitis B (chronic): diagnosis and management (Clinical guideline CG165). 2013. Available at: <https://www.nice.org.uk/guidance/cg165> [accessed 28 April 2022].
- European Association for the Study of the Liver. EASL 2017 Clinical Practice Guidelines on the management of hepatitis B virus infection. Journal of Hepatology 2017;67:370-398.
- Dyson J, Jopson L, Ng S, et al. PTU-101 Rituximab and hepatitis b: are we doing it right? Gut 2015;64:A105-A106. DOI = <http://dx.doi.org/10.1136/gutjnl-2015-309861.216>
- Cargill Z, Grasso N, Bird G. P001 Rituximab initiation, prescribing and Hepatitis B reactivation: retrospective five-year review. Gut 2021;70:A6-A7. DOI = <http://dx.doi.org/10.1136/gutjnl-2021-BASL.11>
- UK Chemotherapy Board. Position Statement on Hepatitis B Virus Screening and Reactivation Prophylaxis for Patients Planned to Receive Immunosuppressive SACT. 2022. Available at https://www.ukchemotherapyboard.org/files/ugd/638ee8_e772682bdf6c4073a808c047eb7e5e01.pdf [accessed 28 April 2022]