BLOOD BORNE VIRUSES(BBV) IN PATIENTS RECEIVING RENAL REPLACEMENT THERAPY(RRT) Version 2	University Hospitals of Leicester NHS NHS Trust RRCV CMG Trust Ref: C199/2016 Renal and Transplant Service

1. Introduction and Who Guideline applies to

Historically, hepatitis B has caused problems in patients with renal failure treated by haemodialysis. In the 1960-70's, several outbreaks led to significant morbidity and mortality amongst patients and staff in renal units in the UK. In 1972, the Rosenheim Report produced a set of guidelines for the control of hepatitis B (HBV) infection in renal units. In 2002, a working party convened by the Public Health Laboratory Service (PHLS) published an updated report that included recommendations related to hepatitis C (HCV) and human immunodeficiency virus (HIV) infection. These reports have been incorporated into recommendations from the Department of Health (1) and a clinical practice guideline from the Renal Association (2) on which this guidance is based.

This guidance is designed only to highlight specific local practices in the UHL network of haemodialysis units. The Renal Association guidelines and Department of Health Good Practice Guidelines are the basis for all other guidance in relation to BBV in dialysis patients.

This guidance is intended to clarify a number of key issues within the UHL haemodialysis network specifically:-

- Screening for blood borne viruses
- Preventing transmission of BBV in haemodialysis units
- Decontamination of equipment

2. Guideline Standards and Procedures

This guideline is to advise how qualified staff caring for patients with Chronic Kidney Disease can protect patients and staff from the risk of transmission of BBV infections by outlining procedures for screening of patients for BBV and preventing transmission from infected patients.

Clinical guidelines are 'guidelines' only. The interpretation and application of clinical guidelines will remain the responsibility of the individual practitioner. If in doubt consult a senior colleague or expert.

Separate guidelines exist for the following:-

- Hepatitis B vaccination in patients with advanced renal failure

(http://moss.xuhl-tr.nhs.uk/together/Documents/Clinical%20Guidelines/Renal%20Services/CKD/20240%20version4%202012%20Hepatitis_B_Vaccination_in_patients_with_advanced_Renal_failure_(UHL_Guidance).pdf)

- Management of haemodialysis (HD) patients travelling to countries with a high prevalence of blood borne virus infections

(http://moss.xuhl-tr.nhs.uk/together/Documents/Clinical%20Guidelines/Renal%20Services/In%20Centre%20Dialysis/29775%20version3%202010%20Isolation_of_HD_Patients_Following_HD_Abroad_(UHL_Guidance).p df)

2..1 Screening for blood borne viruses

2.1.1 When commencing renal replacement therapy

Ideally, all patients starting renal replacement therapy should have their HepBsAg, HepC Ab and HIV Ab checked before starting dialysis. Where patients present as an emergency and require urgent dialysis, these should be checked on the FIRST treatment session and the results requested urgently. The patient should be dialysed in isolation and the machine not used for another patient without careful decontamination (see below 3.3) until HepBsAg has been shown to be negative.

Although national guidance does not recommend HIV screening of incident dialysis patients, local advice is that the incidence of HIV in the region and the availability of effective treatment strongly support initial screening (this is now done for all pregnant women and all emergency admissions).

2.1.2 Transfer between dialysis units

Patient transferring between dialysis units within the network must have an up to date check (i.e. within 3 months) of HepBsAg and HepC Ab status; the receiving unit can refuse to accept patients if this information is not available.

2.1.3 Screening established patients on dialysis

All patients on regular haemodialysis and peritoneal dialysis and pre-dialysis patients should have HepBsAg and HepC Ab status checked every three months. There is no requirement to screen for HIV regularly.

The only exception to this rule is patients who are known HepC Ab positive – there is then no point in retesting. In those where there is a concern about active hepatitis (usually based on abnormal LFTs) or a decision to be made around treatment of hepatitis C or transplantation, Hep C RNA PCR testing should be done.

All established renal failure and pre-dialysis patients should have anti HBs level checked annually unless they have previously been shown to be non-responders or are HepBsAg positive.(see guideline on Hepatitis B vaccination).

2.2 Preventing transmission of BBV in haemodialysis units

2.2.1 Standard precautions

The most important factor in preventing spread of BBV amongst HD patients is strict adherence to hygienic precautions that effectively prevent the transfer of blood or fluids contaminated with blood between patients either directly or via contaminated equipment or surfaces (often referred to as “universal precautions”). It is essential that all staff are familiar with and adhere to these principles.

2.2.2 Isolation of patients who are known BBV carriers

This guidance applies to haemodialysis treatment in both inpatient and outpatient settings.

2.2.2.1 Hepatitis B – Patients who are Hep BsAg positive should be dialysed in an isolation room with a dedicatedmachine.

2.2.2.2 Hepatitis C - Because the risk of transmission through dialysis is lower there is no absolute requirement to isolate patients who are hepatitis C Ab positive. Patients who are Hep C RNA PCR positive (i.e. active viraemia) should be dialysed in isolation or may be cohorted in an area of the dialysis unit. Co horting means dialysing patients with the same condition together but separately from other patients. If a patient is isolated in the bay, because of lack of side room, or other clinical reason, there should be a bed space between them and the next patient to prevent risk of blood splashes. They do not require a dedicated machine.

2.2.2.3 HIV - The risk of transmission of HIV via haemodialysis is very low. Patients who are HIV positive do not require a dedicated machine. Isolation whilst having dialysis should be the default; but, dialysis in open facilities can be considered based on clinical need and a risk assessment to be informed by factors such as viral load.

2.2.2.4 Status unknown - where urgent dialysis is required and BBV status is not known, then precautions for HepBsAg positive patients should be followed until their viral status known. IF this is not possible a risk assessment must be carried out and a Datix completed.

2.3 Decontamination of equipment

2.3.1 Haemodialysis monitors used by HepBsAg positive patients

A machine that has been used for HBV patients can be used again for non-infected patients only after it has been thoroughly decontaminated. All surfaces should be cleaned with a UHL approved chlorine based disinfectant. The nurse must check the machine has been through heat disinfect after last use.

All blood spillage must be decontaminated following the UHL Procedure for Dealing with Blood Spillages located in the UHL cleaning and decontamination policy Trust Ref: B5/2006

The Hansen connectors (dialysate ports) are a high risk area for blood contamination from nurses gloves and should be thoroughly disinfected using a chlorine based detergent. The Hansen connectors on the Fresenius 5008 are covered during machine disinfection but must be accessed and cleaned before a machine can be put back into use. IF the machine disinfection does not clean the internal part of the Hansen connector they will need soaking in sodium hypochlorite (Milton) for 10 minute.

If the machine housing is known to have points that are vulnerable to blood seepage, these should be checked and disinfected. The pressure transducer ports should be decontaminated, if a blood leak has breached these or blood has seeped into the machine technicians will need to be contacted and arrangements made for them to disinfect the internal workings of the machine. The machine should be reported to technicians and appropriately labelled before being returned to technicians room.

2.3.2 External pressure transducers

These are considered a risk area in the transmission of BBV viruses via haemodialysis. The external transducer protectors (arterial and venous pressure ports) on the blood circuit pressure

monitoring lines should be inspected during and after each dialysis session. If there is evidence of breach by blood or saline, then the machine should be taken out of service and machine components that may have come in contact with blood should be replaced or decontaminated by qualified personnel.

2.3.3 Cleaning of dialysis equipment between patients

Cleaning of dialysis machines, chairs and other equipment between patients is a key component of the efforts to minimise the risk of BBV transmission in the renal unit. All equipment should be thoroughly cleaned and disinfected between patients..

2.4 Management of potential exposure

If a haemodialysis patient develops a new BBV infection or a patient with a BBV is dialysed without precautions being followed , expert virological advice should be obtained to co-ordinate enhanced surveillance of at-risk dialysis patients and carers and to arrange treatment and isolation if required of affected individuals. An 'outbreak group' should be formed, which should include representatives from the infection prevention team and expert virologists in addition to staff from the haemodialysis service. This group will coordinate the response. A clearly documented enhanced screening process for contacts with identified staff responsibilities and regular review should be established.

3 Education and Training

All staff caring for patients with established kidney failure need to be familiar with these guidelines particularly staff providing haemodialysis treatment in both inpatient and outpatient settings.

4 Monitoring and Audit Criteria

Key Performance Indicator	Method of Assessment	Frequency	Lead
Policy breaches	Datix reports	On going	Renal Infection prevention group

5 Legal Liability Guideline Statement

Clinical guidelines are 'guidelines' only. The interpretation and application of clinical guidelines will remain the responsibility of the individual practitioner. If in doubt consult a senior colleague or expert. See section 6.4 of the UHL Policy for Policies for details of the Trust Legal Liability statement for Guidancedocuments

6 Supporting Documents and Key References

1. Good practice guidelines for renal dialysis and transplantation units. Prevention and control of blood borne virus infection. Department of Health, London, Sept 2002 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/382207/good_practice_guidelines_renal_dialysis_transplantation.pdf

2. Renal Association. (2019) Clinical Practice Guideline management of blood borne viruses within the dialysis unit. https://ukkidney.org/sites/renal.org/files/FINAL-BBV-Guideline-June-2019.pdf

7. Key Words

blood borne virus, hepatitis B, hepatitis C, HIV, vaccination, haemodialysis

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This table is used to track the development and approval and dissemination of the document and any changes made on revised / reviewed versions

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October 2018	**2**	**Suzanne Glover Deputy Head of Nursing**	**3.2.2 explanation of cohorting and expectation of patient with status unknown being dialysed in isolation 3.3.1 Removed expectation of returning to technicians for routine decontamination. Included need for chlorine based detergent and need to clean Hansen connectors on all machines.**
November 2021	**3**	**Suzanne Glover, Richard Baines, Maria Martinez**	**2.2.2.3 Inclusion of reference to viral load in risk assessing 2.4 Addition of guidance for potential exposure**

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