Trust Guideline for Patients with an Absent or Dysfunctional Spleen

Document Control:

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Version	Date	Author	Reason/Change
V6.0	September 2023	Caroline Hallam	Guideline in new format

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The authors listed above on behalf of the Antimicrobial Subcommittee, which has agreed the final content, drafted the guideline. During its development it was circulated for comment to Haematology, Oncology, Surgical and Paediatrics Directorates.

Comments received from these listed parties have been addressed and incorporated into this guideline. This guideline has been extended to include neonates, as well as paediatrics and adults.

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a clinical guideline applicable to the Norfolk and Norwich University Hospitals.

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Trust Guideline for Patients with an Absent or Dysfunctional Spleen

1. Introduction

1.1. Rationale

This guideline gives advice on vaccinations and antibiotic prophylaxis required for patients who have undergone a splenectomy.

1.2. Objective

The objective of the guideline is to

- Ensure the patient is prescribed the correct antibiotic prophlyaxis at the correct dose post surgery
- Ensure the patient receives the correct vaccinations post surgery.

1.3. Scope

This guideline covers prescribing post splenectomy in adults, paediatrics and neonates.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
Splenectomy:	Elective, e.g., for haematological disease or splenic abscess, cysts, mass and neoplasm. Emergency, e.g., for traumatic injury to spleen or intraoperative splenic injury
Dysfunctional Spleen	This includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction

2. Responsibilities

2.1. Medical staff

Medical staff are responsible for prescribing in accordance with this guideline

2.2. Nursing staff

Nursing staff are responsible for administering prescribed medication in accordance with this guideline

2.3. Pharmacists

Pharmacists are responsible for checking prescriptions and administration against this guideline

3. Processes to be followed

3.1. Definitions

This guideline applies to patients who have recently undergone a splenectomy or who have recently been diagnosed with a dysfunctional spleen.

Splenectomy:
Elective, e.g., for haematological disease or splenic abscess, cysts, mass and neoplasm.
Emergency, e.g., for traumatic injury to spleen or intra operative splenic injury

Dysfunctional Spleen: This includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction

3.2. Risks of Asplenia or dysfunctional spleen

Overwhelming infection is a major risk in patients with an absent or dysfunctional spleen and although uncommon, is associated with a high mortality. These infections are often due to encapsulated bacteria such as *Streptococcus pneumoniae*, *Haemophilus influenzae* type b and *Neisseria meningitidis* and more than half of those infected die. Other serious infections include malaria, babesiosis (caused by tick bite) and *Capnocytophagia canimorsus* (caused by dog bites) and secondary infections following influenza. For these reasons, it is imperative that all patients with an absent or dysfunctional spleen are appropriately immunised and receive appropriate antibiotic prophylaxis.

3.3. Checklist

Appropriate vaccinations given

Appropriate antibiotic prophylaxis prescribed

Patient information leaflet and Splenectomy card given
(Available from pharmacy. It is the responsibility of the team looking after the patient to ensure this happens).

http://www.christie.nhs.uk/media/245400/SplenectomyCard.pdf

Advise patients that they may wish to invest in an alert bracelet or pendant

EDL informs GP that a splenectomy has been performed.

3.4. Vaccination Information

3.4.1. Elective Splenectomy

Ideally start immunisation course at least TWO (ideally four to six) weeks prior to surgery.

3.4.2. Emergency Splenectomy

Ideally start immunisation course at least TWO weeks post surgery.

Given the changing pattern of routine vaccination, patients of different ages may have different "routine" vaccination histories. It is therefore absolutely essential to assess vaccination requirements against an individual's vaccination history.

First diagnosed at age ten years onwards
Older children and adults, regardless of previous vaccination, should receive : • One dose of **PPV23**, **MenB** and **MenACWY** conjugate vaccine followed by • One additional dose of **MenB** 4 weeks later • Annual **influenza** vaccine each season
Vaccines: **Men ACWY Conjugate = Meningococcal A, C, W135 and Y conjugate vaccine (Menveo®)** **Men B = Meningococcal B vaccine (Bexsero®)** **PPV23 = Pneumococcal polysaccharide vaccine**

First diagnosed from two years to under ten years of age
Ensure children are immunised according to the national schedule, and they should also receive. • One dose of **PPV23**, followed by • One dose of **MenACWY** conjugate vaccine • If not received the 2+1 schedule for **MenB**, ensure they have received two doses of **MenB** 8 weeks apart since their first birthday • If they have not received any **PCV** previously they should receive a dose of **PCV13** followed by a dose of **PPV23** 8 weeks later • Annual **influenza** vaccine each season
Vaccines: **Men ACWY Conjugate = Meningococcal A, C, W135 and Y conjugate vaccine (Menveo®)** **Men B = Meningococcal B vaccine (Bexsero®)** **PCV13 = Pneumococcal conjugate vaccine (Prevenar® 13)** **PPV23 = Pneumococcal polysaccharide vaccine**

First diagnosed at 12-23 months of age
If not yet administered, give the routine 12-month vaccines: **Hib/MenC**, **PCV13**, **MMR** and **MenB**, plus • One additional booster dose of **PCV13** and one dose of **MenACWY** conjugate vaccine 8 weeks after the 12-month vaccinations; and • One dose of **PPV23** after the second birthday and at least 8 weeks after the last dose of PCV13 • Annual **influenza** vaccine each season
Vaccines: **Men ACWY Conjugate = Meningococcal A, C, W135 and Y conjugate vaccine (Menveo®)** **Men B = Meningococcal B vaccine (Bexsero®)** **Hib/Men C =Haemophilus type B conjugate vaccine (Menitorix®)** **PCV13 = Pneumococcal conjugate vaccine (Prevenar® 13)** **PPV23 = Pneumococcal polysaccharide vaccine** **MMR=Measles, mumps and Rubella vaccine**

First diagnosed under 1 year of age
Children should be fully immunised according to the national schedule, and should also receive • Two doses of **MenACWY** vaccine at least 4 weeks apart during their first year • An additional priming dose of **PCV13**, such as to receive a total of 2 priming doses at least 8 weeks apart (commencing no earlier than 6 weeks of age) in their first year • One additional booster dose of **PCV13** and one dose of **MenACWY** conjugate vaccine 8 weeks after the 12-month vaccinations; and • One dose of **PPV23** after the second birthday and at least 8 weeks after the last dose of PCV13 • Annual **influenza** vaccine each season for patients aged over 6 months
Vaccines: **Men ACWY Conjugate = Meningococcal A, C, W135 and Y conjugate vaccine (Menveo®)** **Men B = Meningococcal B vaccine (Bexsero®)** **PCV13 = Pneumococcal conjugate vaccine (Prevenar® 13)** **PPV23 = Pneumococcal polysaccharide vaccine**

Revaccination Schedule
• Offer annual influenza vaccine to all patients • PPV23 vaccination every 5 years

4. Antibiotic Prophylaxis

All patients should be offered lifelong antibiotic prophylaxis. The increased risk of infection in patients with hyposplenism is life long, but is highest early after splenectomy, the biggest risk being from pneumococcal infection.

Patients deemed to be at highest risk

- Aged <16 years or >50 years old

- Inadequate serological response to pneumococcal vaccination
- A history of previous invasive pneumococcal disease
- Splenectomy for underlying haematological malignancy, particularly those who have received splenic irradiation or who have ongoing GvHD are also at continuing high risk.
- Patients with active ongoing graft-versus-host disease

4.1. Adult Antibiotic Prophylaxis

	Prophylaxis	**Duration**
First line	Penicillin V 250mg bd	Minimum 2 years but preferably lifelong. However, antibacterial prophylaxis may be discontinued in those over 5 years of age with sick-cell disease who have received pneumococcal immunisation and who do not have a history of severe pneumococcal infection
If penicillin allergy	Clarithromycin 250mg bd	

4.2. Child Antibiotic Prophylaxis

	Prophylaxis	**Duration**
First line	**Under 1 year** Penicillin V 62,5mg bd **1 – 5years** Penicillin V 125mg bd **5-18 years** Penicillin V 250mg bd If cover also needed for H.*influenzae* in child give amoxicillin instead .	Antibiotic prophylaxis should be continued until at least 16 years old (and for a minimum of 2 years and preferably lifelong) However, antibacterial prophylaxis may be discontinued in children over 5 years of age with sick-cell disease who have received pneumococcal immunisation and who do not have a history of severe pneumococcal infection.
If penicillin allergy	**1 month – 2 years** Erythromycin 125mg bd **2-8 years** Erythromycin 250mg bd **8-18 years** Erythromycin 500mg bd	

4.3. Standby courses of Antibiotics

Patients may develop infection despite vaccination and antimicrobial prophylaxis; these patients require treatment with broad spectrum antibiotics as soon as possible.

All patients should keep a supply of antibiotics at home, changing from prophylactic to therapeutic doses if they develop a febrile illness. This is particularly important for those who do not, or will not take prophylactic antibiotics or due to compliance problems. This should be discussed on an individual basis with the patient. If the patient requires a standby course of antibiotics, we recommend Amoxicillin 500mg tds or Clarithromycin 500mg bd (if penicillin allergy). Patients should be advised of the importance of seeking medical attention as soon as possible if they develop any signs of infection e.g. sore throat, fever, malaise, severe headache and flu-like symptoms.

5. Special Patient Groups/ Situations

5.1. Chemotherapy and Radiotherapy (or other immunosuppressive treatment)

- Ideally, vaccinations should be given at **least TWO weeks** (ideally 4-6 weeks) before initiation of treatment such as chemotherapy or radiotherapy. Where it is not possible to vaccinate beforehand, splenectomy, chemotherapy or radiotherapy should never be delayed.
- If it is not practicable to vaccinate TWO weeks before the initiation of chemotherapy and/or radiotherapy, immunisation can be delayed until at **least THREE months** after completion of therapy in order to maximise the response to the vaccine, whilst ensuring adequate antibiotic cover is prescribed in the interim.
- Individuals with immunosuppression should be vaccinated in accordance with the standard schedule but it should be borne in mind that these individuals may not make a full antibody response.

5.2. Pregnancy/Breast-feeding

- All of the vaccines may be given during pregnancy and breast-feeding when protection is required without delay.

5.3. Travel

- Patients should be educated as to the potential risks of overseas travel, particularly with regards malaria and unusual infections, for example those resulting from animal bites and tick bites.

5.4. Animal Bites

- Human, dog or other bites may be fatal if untreated due to infection with *Capnocytophagia canimorsus* and other virulent organisms. All animal bites need to be treated quickly with antibiotics.

5.5. Tick bites

- Babesiosis is a rare tick borne infection that can cause moderate to severe disease, including haemolytic anaemias. Therefore, it is essential to take precautions against being bitten in endemic areas.

6. References

Department of Health – Immunisation against Infectious Disease 2013 – “The Green Book” – updated version available online:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/309218/Green_Book_Chapter_7_v1_3.pdf

7. Audit of the process

Compliance with the process will be monitored through the following:

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Vaccinations given appropriately	Audit	Antmimicrobial Pharmacist	Antimicrobial Subcommitee meeting	Yearly
Antibiotic prophylaxis prescribed appropriately	Audit	Antmimicrobial Pharmacist	Antimicrobial Subcommitee meeting	Yearly
Datix reports	Ad hoc	Antmimicrobial Pharmacist	Antimicrobial Subcommitee meeting	Ongoing

The audit results are to be discussed at an Antimicrobial subgroup committee meeting to review the results and recommendations for further action.

8. Equality Impact Assessment (EIA)

Type of function or policy	New/Existing (remove which does not apply)

Division	All	**Department**	Pharmacy
Name of person completing form	Caroline Hallam	**Date**	

Equality Area	**Potential Negative Impact**	**Impact Positive Impact**	**Which groups are affected**	**Full Impact Assessment Required YES/NO**
Race	No	No	N/A	No
Pregnancy & Maternity	No	No	N/A	No
Disability	No	No	N/A	No
Religion and beliefs	No	No	N/A	No
Sex	No	No	N/A	No
Gender reassignment	No	No	N/A	No
Sexual Orientation	No	No	N/A	No
Age	No	No	N/A	No
Marriage & Civil Partnership	No	No	N/A	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?		No effect on equality/diversity		

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.