Guidance for the Prevention of Infection in Patients with an Absent or Dysfunctional Spleen

This guidance gives recommendations for the prevention of infection in patients with an absent or dysfunctional spleen. These patients are at increased risk of severe infection particularly from Streptococcus pneumoniae but also Haemophilus influenzae type b (Hib) and Neisseria meningitidis.

The prevention of infection in patients without a functioning spleen depends on 3 major strategies:

(i) Education of the patient

- Educate patients regarding the risk of infection and the importance of prompt recognition and treatment of infections.
- Encourage patients to wear a MedicAlert® bracelet (or equivalent) and to carry a ‘I have no functioning spleen’ card – this details information about their condition, other clinical information (e.g. date of relevant immunisations) and contact telephone numbers. In an emergency this information may be life-saving.
- Cards are available from the hospital pharmacy on diagnosis or when splenectomy is performed, or alternatively from The Health Protection Team (Immunisation), E-mail: joseph.ewesor@scotland.gsi.gov.uk
- Patients should be educated about the risks of animal bites/scratches. All animal bites/scratches need to be treated quickly, to reduce the chance of infection from Capnocytophaga canimorsus, which can lead to fulminant sepsis. Antibiotics are usually prescribed; see NHS Fife primary care antibiotic guidelines for more details.
- Clinical human babesiosis is a rare tick borne infection that can cause moderate to severe disease, including haemolytic anaemias. Advice patients to take precautions against being bitten in endemic areas.
- Patients with an absent or dysfunctional spleen are at increased risk of severe falciparum malaria. Patients should be given advice about measures to reduce exposure to mosquito bites and should be given appropriate chemoprophylaxis stressing the need for close adherence to it.
- Patients and their relatives should be made aware that despite immunisation and prophylactic antibiotics, breakthrough infections may occur, including the risk of sepsis, and when unwell they should seek and follow appropriate medical advice.

(ii) Vaccination

- The risk of sepsis post-splenectomy is highest post-operatively. However, cases of fulminant infection have been reported more than 20 years after splenectomy therefore it is important that all patients should be immunised according to the most recent guidance regardless of when their splenectomy was performed.
- Administration of vaccines should be clearly noted in the medical records and the dates of vaccination should be recorded on the patients ‘I have no functioning spleen’ card.

<table>
<thead>
<tr>
<th>Indication</th>
<th>When to immunise</th>
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<tbody>
<tr>
<td>Elective Splenectomy</td>
<td>• At least 2 weeks (ideally 4-6 weeks) prior to surgery.</td>
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<tr>
<td></td>
<td>• Start prophylactic antibiotics immediately post surgery</td>
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<tr>
<td>Emergency Splenectomy</td>
<td>• At least 2 weeks post surgery</td>
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<td></td>
<td>• If a patient is discharged from hospital prior to immunisation ensure that follow-up arrangements are in place with their GP.</td>
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<tr>
<td></td>
<td>• Start prophylactic antibiotics immediately post surgery</td>
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<tr>
<td>Immunosuppressive therapy</td>
<td>• 2 weeks before immunosuppressive therapy or at least 3 months after immunosuppressive therapy or until recovery of adequate immunological function.</td>
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<td></td>
<td>• Ensure adequate antibiotic cover is prescribed in the interim.</td>
</tr>
<tr>
<td>Medical conditions pre-disposing to hyposplenism</td>
<td>• As soon as possible after diagnosis</td>
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• Re-immunisation: - Influenza vaccine should be given annually.
  - PPV 23 vaccine is usually required every 5 years
(iii) **Antibiotic prophylaxis**

- The risk of sepsis is highest in the first few years post splenectomy but persists lifelong therefore antibiotic prophylaxis should be lifelong where possible. See table 1 below.

- The use of lifelong antibiotics prophylaxis has potential disadvantages as it can be associated with the development of bacterial resistance, side-effects, allergy and poor adherence.

- Evidence has shown that some patients are at much greater risk of invasive pneumococcal infection than others and this information may be used in risk stratification. High-risk patients need careful counselling and follow-up to ensure adherence to antibiotic prophylaxis. It is important that these high risk patients remain on lifelong antibiotic prophylaxis.

  **High risk** patients include:
  - Patients less than 16 years or greater than 50 years of age.
  - Patients with a history of previous invasive pneumococcal disease.
  - Patients undergoing splenectomy for haematological malignancy rather than trauma (particularly in the context of on-going immunosuppression)
  - Those who have received splenic irradiation or who have ongoing GvHD.

- Patients not at high risk should be counselled regarding the risks and benefits of lifelong antibiotics and may choose to continue or discontinue prophylaxis.

- Patients who choose to stop antibiotic prophylaxis should be given an emergency treatment supply of amoxicillin (or if penicillin-allergic clarithromycin/erythromycin) to take at the first sign of systemic infection whilst seeking urgent medical attention.

- Patients continuing antibiotic prophylaxis should also be given an emergency treatment supply of appropriate antibiotics for use at the first sign of systemic infection whilst seeking urgent medical attention. Treatment should be from an antibiotic class likely to be non-cross resistant. (Refer to NHS Fife primary care antibiotic guidance or seek microbiology advice)

- For patients travelling to areas with a high incidence of penicillin resistant pneumococci, contact Microbiology to discuss appropriate emergency treatment supplies.

- First line antibiotic prophylaxis is amoxicillin due to better absorption and tolerability. However, there is no need to switch a patient who is established on and happy to continue with phenoxymethylpenicillin.

**Table 1: Antibiotic prophylaxis for patients with an absent or dysfunctional spleen**

<table>
<thead>
<tr>
<th>Age at start of prophylaxis</th>
<th>First Line</th>
<th>Penicillin allergy</th>
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<tbody>
<tr>
<td>Adults (&gt;16 years)</td>
<td>Amoxicillin 500mg BD</td>
<td>Erythromycin 500mg BD</td>
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<tr>
<td></td>
<td></td>
<td>or Clarithromycin 250mg BD</td>
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<tr>
<td>Children (≤16 years)</td>
<td>Amoxicillin: 1 mth – 5 yrs: 125mg BD 5 – 12 yrs: 250mg BD &gt;12 yrs: 500mg BD</td>
<td>Erythromycin: 1 mth – 2 yrs: 125mg BD 2 – 8 yrs: 250mg BD &gt;8 yrs: 500mg BD</td>
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References:


Authored by: NHS Fife Antimicrobial Management Team  Date: June 2015  Review Date: June 2017

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