Panton-Valentine Leukocidin positive Staphylococcus aureus (PVL-SA)

Guidance for health professionals

The purpose of this poster is to ensure that clinical indications of Panton-Valentine Leukocidin positive Staphylococcus aureus (PVL-SA) are recognised promptly so advice and treatment are sought as soon as possible to reduce the risk of transmission to others within the household, wider community or health care setting.

Skin and soft tissue infections (SSTIs) and PVL-SA

Staphylococcus aureus (SA) is the most common pathogen responsible for skin and soft tissue infections (SSTIs). PVL-SA caused SSTIs are usually more severe and the impact on the patient can be considerable due to the need for prolonged treatment. Early recognition of PVL-SA infections is key.

What is PVL-SA?

Staphylococcus aureus is a common bacterium found on the skin and mucous membranes. It is predominantly associated with skin and wound infections.

PVL is a toxin produced by a small percentage of Staphylococcus aureus (PVL-SA) that can destroy white blood cells and cause more serious infections in wounds, joints and also (but rarely) pneumonias (invasive disease).

Epidemiology of PVL

Strains of PVL-SA have been known to cause disease for over a century. Over the last decade or so, PVL-related disease has increased world-wide. Currently, around 2,000 cases occur per annum in England and Wales; two thirds of these are caused by meticillin sensitive strains of S. aureus (PVL-MSSA), one third are due to meticillin resistant strains (PVL-MRSA).

PVL-SA is commonly (but not exclusively) associated with:
- infections in previously healthy individuals in the community
- under 40 year olds, but anyone is susceptible.

High risk groups for transmission of PVL-SA

PVL-SA infections are highly transmissible and can spread in settings where individuals are in close physical contact or may share personal items, for example towels. These groups include:
- families/households
- educational settings (including nurseries)
- military personnel/barracks
- close contact sports, e.g. rugby, judo, wrestling
- care homes
- gyms
- prison settings.

Signs and symptoms

You should suspect PVL-SA if a patient presents with the following:
- pus-producing skin infections (boils and abscesses) which vary in severity and may be recurrent
- cutaneous lesions ≥5cms in diameter, which need different treatment from smaller lesions and may be recurrent
- cellulitis (inflammation + blistering of the skin)
- pain that is out of proportion to severity of cutaneous findings
- necrosis.

Risk assessment guide if PVL-SA is suspected

Diagnosis

Is PVL-SA suspected?
1. Are there signs and symptoms of PVL-SA?
2. Is there a previous clinical history of PVL-SA?
3. Is there a history or suspicion of PVL-SA within close contacts (household, family or partner) within the last 12 months?

Screening

If Yes to one or more of these questions please follow risk assessment guide

No

Consider alternative diagnosis

Wound care

1. Swab affected site (including pus if present) and refer to local guidance on the management of SSTIs for further information/advice
2. Label all swabs(s) as suspected PVL-SA infection and include relevant clinical patient information
3. Refer to GP/Medical Officer (MO) if incision and drainage (I&D) required

Patient information

1. Personal hygiene should be emphasised including hand washing, care to avoid sharing towels, bath water etc
2. Patient information
- supply local leaflets on the management of SSTIs if available or alternatively go to the NHS CSK website www.cks.nhs.uk/home
3. Exclusion – patient works in a high risk area, for example health care worker, request that patient seeks advice from their local occupational health department. It is recommended that individuals with SSTIs refrain from communal activities until wounds have healed, for example swimming, contact sports and massage

Management of swab result

PVL-SA negative – consult with GP/MO
PVL-SA positive – consult with GP/MO and refer to local/national PVL-SA guidelines

References


Acknowledgements

With thanks to Angela Keens, Clinical Scientist/ Head of Staphylococcus Reference Laboratory, Centre for Infections, and other members of the Health Protection Agency.