It is time to focus on surgical site infection

Surgical site infection is both life-threatening and preventable, says Professor David Leaper. So where is all the research?

Thanks to a slew of media reports in recent years highlighting the dangers of 'superbugs', patients have been left in no doubt of the impact of healthcare-associated infections (HCAIs). It is unacceptable that anyone should enter a healthcare system and acquire an infection, but although much work has been done to eradicate them HCAIs still present a significant burden to patients and healthcare services alike.

Conservative estimates suggest that HCAIs occur in 5-10% of healthcare contacts, mostly within secondary care. They comprise urinary, respiratory, skin and soft tissue infections, acquired bacterial and viral enteritis, and bacteraemia. Several are also associated with resistant organisms, such as met(h)icillin resistant *Staphylococcus aureus*, or emergent organisms, such as *Clostridium difficile*.

Another example, and one that we are focusing on in this issue of Wounds International, is surgical site infection (SSI). Approximately 5% of surgical patients can expect to develop an SSI yet they remain the least well known of all the HCAIs, attracting less than 1% of research funding. This is despite the fact that SSIs are the most preventable of all the HCAIs.

The high rates of SSI have to some extent been hidden by poor definitions and inadequate post-discharge surveillance. Most SSIs present 7-10 days after surgery, which in these days of frequent day case operations and swift inpatient turnaround often means that they are only recognised when the patient has been discharged to primary care services. By this time, deep or organ space SSIs can be life-threatening and require expensive specialist intervention.

Recognition, prevention and treatment are improving rapidly with the publication of surgical guidelines (principally avoiding perioperative hypothermia, ensuring optimal antibiotic prophylaxis and using hair clippers rather than razors). However, if they are to match the success of the World Health Organization's programme Safe Surgery Saves Lives (http://www.who.int/patientsafety/safesurgery/en), these guidelines need to be widely accepted by surgical teams. Increased awareness of SSIs has led to some good quality research, much of which is based on a return to the use of antiseptics in skin preparation, antimicrobial sutures and antimicrobial dressings, but as ever there is still much more to do.

In this issue of Wounds International several experienced and respected authors have been asked to

provide a global perspective on ways to reduce SSIs, some of which involve contentious but crucial techniques.

Among the articles, Donald Fry, an experienced US general surgeon, examines the use of bowel preparation before elective colorectal surgery to prevent SSI. Dr Fry presents an overview of different practices, such as the use of oral antibiotic prophylaxis and emphasises the need for universal definitions and adequate post-discharge surveillance.

Ann Jakeman, a practising tissue viability nurse in the UK, tackles the difficult issue of delayed healing in leg wounds after saphenous vein harvest for coronary artery bypass. Following the introduction of endoscopic harvesting and strict wound management guidelines, her team has achieved lower rates of wound breakdown and considerable cost-savings.

A Chinese team, led by Jianan Ren, present their extensive experience of managing one of the smallest groups of SSIs - those which present postoperatively as abscesses in organ cavities. The group takes a radiological approach that involves the placement of a wide sump drain through a trocar. This allows suction to be applied through a wide bore tube permitting more efficient abscess drainage. The technique avoids the need for laparotomy and results in a reduction in morbidity and mortality.

Finally, Martin K Schilling and Christoph Justinger, two general surgeons from Germany, discuss the pathophysiological causes of SSI and explain the introduction of new antimicrobial sutures, which have resulted in a reduction in SSIs.

The articles in this issue of Wounds International clearly demonstrate that clinicians are working hard to eradicate SSIs from their practice. It is time that their work was supported by research into how these potentially life-threatening events can be more easily avoided in operating rooms and hospitals around the globe.

AUTHOR DETAILS

David Leaper is a Visiting Professor at Cardiff University and Imperial College, London. He also chaired the UK's National Institute for Health and Clinical Excellence's (NICE) guideline for the prevention and management of surgical site infection. He is also a member of the UK's Antimicrobial Resistance and Healthcare-associated Infection advisory committee.