Meeting report: antimicrobial stewardship in wound management

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At the 27th conference of the European Wound Management Association (EWMA), which was held in Amsterdam on May 3–5, 2017, a joint symposium was held between EWMA and the British Society for Antimicrobial Chemotherapy. The symposium was organised into two sessions. The first focused specifically on wound care issues and the second concerned antimicrobial stewardship programmes.

Antimicrobial resistance (AMR) has long been recognised as a serious threat to the effective treatment of infection. This has arisen from the use and misuse of antimicrobial agents. The key factors for the general misuse of antimicrobial agents in wounds are:

- Diagnostic uncertainty (is there a bacterial infection in this wound?)
- Clinical ignorance (when to treat with antibiotics)
- Clinical fear (of failing to treat properly, or of having a bad outcome)
- Patient demands (for unnecessary antibiotic therapy) (Lipsky et al, 2016).

The World Health Organization (WHO) estimates that 50% of all medicines are inappropriately prescribed, dispensed or sold, and that half of all patients fail to use them correctly (WHO, 2003). The European Wound Management Association (EWMA) believes that the misuse of antimicrobials is as widespread in wound care as any other medical discipline. It, therefore, advocates the prudent use of antibiotics in wound care, aims to promote the responsible use of non-antibiotic technologies and to encourage the implementation of antimicrobial stewardship (AMS) specific for wounds. The British Society for Antimocrobial Chemotherapy (BSAC) is entirely dedicated to the issues concerning antimicrobial use and has spearheaded the agenda by campaigning for effective antimicrobial use. EWMA and BSAC have collaborated since 2014 to promote antimicrobial stewardship (AMS) in wound care. Joint EWMA/BSAC symposia were held in 2015 (London, UK) and 2016 (Bremen, Germany) and a joint policy paper was published in 2016 (Lipsky et al, 2016). Collaboration will continue with work on an e-learning module on antimicrobial stewardship in wound management during 2018 and 2019.

Session 1 — non-antibiotic antimicrobial interventions in wound care: agents, resistance and beyond!

Professor Rose Cooper (Cardiff Metropolitan University, UK) set the scene by briefly reviewing the historical development of antimicrobial resistance and outlining estimations of its future impact. Although the control of infection has largely relied on antibiotics, in wound care a wider range of antimicrobial interventions have long been employed. She described established, emerging and developing non-antibiotic technologies pertinent to wound care. In view of rapid microbial evolution, multidrug resistance and cross resistance to antibiotics and antiseptics, the continual need for discovering innovative antimicrobial interventions was explained. Wound management in a post-antibiotic era will, therefore, necessitate increased action to prevent infection, careful selection of appropriate antimicrobial interventions and research into novel therapies and diagnostic techniques.

Non-antibiotic alternatives in clinical practice

Dr Jan Stryja (Podlesi Hospital, Czech Republic) demonstrated the appropriate use of existing non-antibiotic alternatives and antibiotics with reference to case studies of patients with complex wounds that were successfully treated.

Session 2 — what can we learn from national approaches to AMS

Dr Philip Howard (Vice President of BSAC;

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Leeds teaching hospital; University of Leeds) introduced the second session by explaining what can be learnt from national approaches to AMS. He explained how antibiotics have extended lifespan by more than 8 years due not only to the effective treatment of infection, but by facilitating advanced medical technologies. He highlighted the most prevalent AMR strains from recent global surveys and gave reasons for AMR. Ten points for tackling AMS were identified by the United Nations in 2016. A global survey of AMS in hospitals conducted in 2012 showed that of 67 countries surveyed, only 52% had AMS programmes (Howard et al, 2015). Barriers to AMS were identified in that survey, but more recently language has been identified as a major obstacle because the terminology of antibiotic resistance is not widely understood (Mendelson et al, 2017).

Euregional AMS strategy: an integrated stewardship model: antimicrobial, infection prevention and diagnostics (AID)

Dr Jan-Willem Dik (University Medical Center, Groningen, The Netherlands) presented an AMS strategy that was developed in Groningen and implemented in the north eastern region of the Netherlands. The AID Stewardship Model was based on three constructs:

- Antimicrobial Stewardship Program
- Infection Prevention Stewardship Program
- Diagnostic Stewardship Program.

This approach was based on timely and correct diagnosis of infection, efficient interpretation of results and impact on therapy and working aseptically to prevent infection. Essentially, the multidisciplinary AMS team devised an approach to collate information so that when a patient entered hospital and received antibiotic, an alert was raised after 48 hours and a bedside consultation on further antibiotic treatment was taken (Dik et al, 2015). In urology wards, for example, this resulted in fewer patients taking antibiotics, a reduction in the use of IV antibiotics, and reduced length of hospital stay (on average one day less per patient). For each patient, the positive return was on average EUR350. The importance of diagnostics to promote efficient therapy and audit/feedback was explained. The need for infection prevention was also stressed. The application of this approach was also related to wound care in the University Medical Center Groningen.

UK strategy for combating resistance

Dr Howard described the five-year strategy for dealing with AMR in the UK that was initiated in 2013. It was designed to improve knowledge and understanding of AMR, to conserve the effectiveness of existing treatments and to stimulate novel treatments and diagnostics. Improvements in AMS have relied on implementing existing guidelines, developing further guidelines and quality standards for all healthcare providers, and registering/licensing those providers. AMS toolkits for professionals and information sheets for patients have been developed. In one initiative called 'Start Smart then Focus', patients are screened for sepsis within 60 minutes of presentation to start appropriate IV antibiotics rapidly and to avoid giving antibiotics in the absence of bacterial infection. A clinical review is then undertaken after 48–72 hours and a documented decision is taken. This could lead to several decisions: to stop the antibiotic, to switch from IV to oral, to change the antibiotic, to continue in hospital, or to continue to treat at home. Incentive schemes to improve antibiotic prescribing in primary care and hospitals have involved financial measures. Antibiotic prescribing in the UK reduced for the first time in 2016 and *Clostridium difficile* infections were also reduced by 9% compared with the previous year.

Further improvements to AMS will depend on the development of pathways of care that include diagnostics, enhanced surveillance of emerging critical strains (drug-bug outputs) and continued dissemination of information. Data on antibiotic prescribing and infection rates are publically available. Improvements in professional engagement will be achieved by educating and training healthcare professionals in antibiotic prescribing and stewardship competencies at all levels (undergraduate, postgraduate and continuing professional development). Competencies have been identified in five dimensions. Open access e-learning modules for practitioners have been developed and an antibiotic guardian campaign has begun. To encourage public engagement, animated cartoons for children are used in schools and there is a national Antibiotic Action day (November 18 every year). Further surveys and television adverts are planned. Tacking AMR in the UK from 2017 onwards has been summarised in three targets: Prevent, Promote and Protect.

Conclusion

The global impact of AMR is well recognised, but the measures required to preserve antimicrobial efficacy are not yet well implemented. Everyone has a responsibility to contribute to AMS. WINT