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Enhancing skin integrity: an interprofessional approach

Earlier this year the University of Huddersfield's Institute of Skin Integrity and Infection Prevention in association with the *Journal of Wound Care (JWC)* held the first International Skin Integrity and Infection Prevention Conference. The 2-day event consisted of a mix of keynotes, symposia and short presentations from key opinion leaders and post graduate research students. Here **Professor Karen Ousey and Dr Rachel Webb** present the highlights of this event.

The University of Huddersfield's Institute of Skin Integrity and Infection Prevention, in conjunction with the *Journal of Wound Care (JWC)*, hosted the first 2-day International Skin Integrity and Infection Prevention Conference at the end of June 2016. Over 160 delegates with a range of international speakers attended the conference. Demonstrating the University's commitment to the expanding Institute of Skin Integrity and Infection Prevention, the event was opened by the university Pro Vice Chancellor Professor Andrew Ball. He gave a history of the University and explained its commitment to an inter professional approach to research that has a positive effect on patient outcomes while improving quality of life outcomes.

Day 1, chaired by Jacqui Fletcher (Independent Wound Care Consultant), focused on managing infection opening with a breakfast symposium led by Dr George Smith (NIHR Fellow, Hull and York Medical School) investigating and exploring the use of a dialkylcarbamoylechloride (DACC)-coated antimicrobial dressing to manage surgical site infection (SSI). Smith gave an overview of the published work using DACC coated-dressing in bioburden control and chronic wound care. He then presented the results of his study which demonstrated a significant reduction in SSI rate in 100 consecutive non-implant vascular patients when using the dressing.

Professor David Leaper (Professor of Clinical Sciences University of Huddersfield) followed explaining new infection and management strategies highlighting the gap that still exists between laboratory research findings and the implementation of these findings into clinical practice. He discussed the importance of early recognition and understanding of biofilm presence in acute and chronic wounds and its relation to the risk of infection. The arguments regarding the wider use of antiseptics were examined by Professor Ojan Assadian (Professor for Skin Integrity and Infection Prevention University of Huddersfield) who suggested that the aim of antiseptics was not to replace antibiotics, but to use antiseptics topically wherever possible to maintain effectiveness of antibiotics for systemic treatment in the prevention of microbial resistance. The parameters for effectively identifying relevant antiseptics were described and discussed in Professor Kramer's (Institute of Hygiene and Environmental Medicine University Medicine Greifswald) talk 'New findings and results on the use of antiseptics on wounds'. A talk which can be summed up with Kramer's quote to end the session:

'Not the antiseptic with the broadest range of action is the most adequate one, but the most adequate one for the special indication should be the first choice.'

The last talk of the day was Dr Anna Casey (University Hospitals Birmingham NHS Foundation Trust) who examined strategies for the prevention of SSI and central line-associated blood stream infections. Her session concentrated on strategies that can prevent surgical site- and IV catheter-related infection. It was split into three areas where techniques and antiseptics can make a difference; before surgery/catheter insertion, perioperatively/during catheter insertion and postcatheter insertion.

The final part of day 1 was given to a session exploring what the 160 delegates felt was important when deciding whether a dressing was cost-effective. The results of this question-led voting will be presented at a later date.

Day 2, chaired by Karen Ousey, (Professor of Skin Integrity), opened with a breakfast symposium exploring Reactive Oxygen and its role as a solution to antimicrobial resistance, with Claire Stephens (Consultant Complex Wounds Nurse and Founder/ Chief Executive Officer woundcare4heros) and Dr Chris Dunnill (Research Fellow, University of Huddersfield) presenting a comprehensive review of the data on this subject.

Professor Amit Gefen (Professor of Biomedical Engineering, university of Tel Aviv) presented his work in a talk titled 'Computer modelling and simulations for understanding chronic wounds and wound healing'. Professor Gefen discussed tissue deformation that may compromise skin integrity through distortion of cell shapes and structures which impair biological function. Wound measurement was critically discussed in the second symposium of the day, led by Dr Paul Chadwick (Consultant Podiatrist, Salford Royal NHS Foundation Trust), Dr Leigh Fleming (Subject leader, School of Computing and Engineering, University of Huddersfield) and Leanne Atkin (Vascular Nurse Specialist, Mid Yorkshire NHS Trust). They identified lack of research-based developments surrounding accurate wound measurement techniques for clinical practice explaining that there was an urgent need for investigation into this area.

The next talks concentrated on new technologies and how these can be used in the wound care arena. Dr Leigh Fleming and Dr Jess Power described three new technologies that have the ability to change the way we study and treat wounds: textiles, multidisciplinary innovation and 3D printing products explaining some of the areas where the ability to model and print in 3D could begin to help in the field of wound care. They also described the challenges of measuring skin integrity, when having to assess contact (pressure, area), condition (texture, moisture, temperature, integrity), performance (hydration, absorption, elasticity, strength), and interaction (pressure, shear, friction, temperature).

Professor Dan Bader (Professor of Bioengineering and Tissue Health, University of Southampton) presented his research focusing on bioengineering strategies in managing skin integrity. He demonstrated that the experimental approach adopting both biomechanical and microclimate measures, with the use of bio markers to assess the skins response to mechanical-induced irritation, can provide boundary conditions at the device skin interface using a computational approach. Professor Karen Ousey and Dr Cath O'Halloran explained the funding changes related to health professional education, highlighting how these may impact on clinical practice and innovation. The conference closed with Professor Karen-Leigh Edward, (Associate Professor, Australian Catholic University) who stated that an international interprofessional approach was essential to managing skin integrity effectively.

Throughout the 2 days, delegates questioned the science presented and related this to clinical practice. The interprofessional nature of the conference showcased the importance of a range of professional disciplines working collaboratively in improving technology and enhancing the end users' experience of health care. The University of Huddersfield's Institute of Skin Integrity and Infection Prevention brings together a range of disciplines including health, engineering, biology, microbiology, pharmacy and art and design to ensure that new technologies and innovations are examined, developed and tested to meet the ever-changing needs of health care. *JWC*
