

Moisture-associated skin damage: a skin issue more prevalent than pressure ulcers

KEY WORDS

- » Critical care
- » Faecal incontinence with diarrhoea
- » Incontinence-associated dermatitis
- » Moisture-associated damage

While there is much focus on pressure ulcers (PU), research has shown that the incidence rate of incontinence-associated dermatitis (IAD) in critically ill patients is often higher than for PUs (Bliss et al 2011; Becker et al 2017). The nature of acute illness predisposes this patient population to acute faecal incontinence with diarrhoea (AFID) and they are therefore at higher risk of skin damage to their sacrum. An opportunity was sought to reduce incidences of this type of patient harm.

A quality improvement program introduced two clinical-decision support tools; one for the assessment of skin for patients with AFID and a second tool to guide the management of patients' skin, based on the assessment. Extensive consultation followed before a final version was launched across two critical care (CC) units. The CC nurses and healthcare assistants now have evidence-based guidance to assess skin damage caused by incontinence and a clear plan around this aspect of care. The tool can be applied to any person who experiences incontinence and, therefore, at risk of IAD.

Moisture-associated skin damage (MASD) occurs when the skin is repeatedly exposed to moisture. When this moisture is either urine and/or faeces, the skin damage is known as incontinence-associated dermatitis (IAD). Coyer and Campbell (2018) confirm that critically unwell patients are at higher risk of IAD due to the nature of the acute illness predisposing this patient group to acute faecal incontinence with diarrhoea (AFID). Bliss et al (2011) reported an IAD incidence rate of 36% in critically ill patients, a rate higher than PU incidence, with Becker et al (2017) reporting this at 13.6%. A baseline audit across our Critical Care service (n=104) confirmed a significant prevalence of AFID (53%), of which 19% developed IAD.

With a growing body of evidence related to IAD, this article brings together the evidence base and literature reviews into a clinical decision-making tool that aids the assessment, management and reporting of the most common form of MASD, namely IAD. The goal of this quality improvement initiative was to support staff in this complex area of care, with the aim that incidences of this type of patient harm are reduced.

Whilst this article refers to an initiative across an acute care setting, IAD is caused by exposure

to urine and/or faeces, and, therefore, applicable to wider areas; particularly the care of the elderly or where there is high use of antibiotics. Additional risk factors that predispose patients to IAD are seen in *Box 1* and highlight the relevance of this initiative across both acute and community settings. Community nurses describe the widespread use of pads rather than urinary catheters in the community, and Binks et al (2015) referred to a high prevalence of chronic faecal incontinence in nursing homes. In addition, the Global IAD Expert Panel advise that any patient with urinary and/or faecal incontinence should be placed on an IAD prevention protocol to reduce exposure and protect skin (Beeckman et al, 2015).

The need to enhance the care of patients, both at risk of and with IAD, was identified as a priority within the skin integrity strategy for our critical care service. Opportunities were sought to promote skin integrity and raise the assessment and care of patients with IAD to the same level of priority as PU care. MASD is now reportable with additional scrutiny around this aspect of practice, highlighting the need for robust skin care regimens in place. The following issues were also identified across the critical care service:

PEGEEN FISHER

Critical Care Sister, Critical Care Unit, Sandwell and West Birmingham NHS Trust

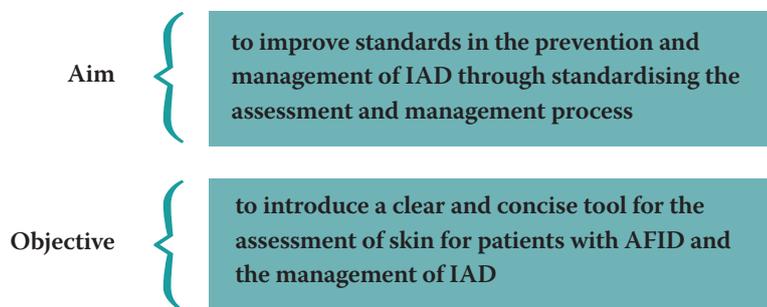
CARYS HIMAN

Critical Care Sister, Critical Care Unit, Sandwell and West Birmingham NHS Trust

Box 1. Key risk factors for IAD (Beeckman et al, 2015)

Incontinence
Frequent episodes of incontinence
Use of occlusive containment devices
Poor skin condition
Compromised mobility
Diminished cognitive ability
Inability to perform personal hygiene
Pain
Raised body temperature
Medications (antibiotics, immunosuppressants)
Poor nutritional status
Critical illness

Figure 1. The aim and objective of the initiative



- ▶ Inconsistent assessment of skin damage by incontinence
- ▶ Inability to ascertain from documentation whether the IAD is improving or deteriorating
- ▶ Lack of consensus for the management of IAD
- ▶ Occasions where an area of IAD had been assessed and reported as a Category 2 PU.

A lack of clarity around the management of IAD is consistent with research findings across Europe (Bayón et al, 2012) and the UK (Sarkar, 2018). A combination of all these factors provided the impetus for an initiative to reduce incidences of this type of patient harm, promoting early intervention for more effective prevention (Figure 1).

CONSEQUENCES OF IAD ON PATIENT OUTCOME

Preventing or managing single or multiple organ failure in acutely unwell patient presents many challenges. Skin is an organ too, which is sometimes overlooked when priorities have to be made elsewhere (Coyer and Campbell, 2018; Warren and Kent, 2018). The impact of IAD on a patient is significant and summarised by Ousey and Connor (2017). Likened to a burn, IAD causes considerable pain and discomfort to the patient; even well-sedated patients can exhibit signs of distress when the skin damaged area needs to be cleaned. The discomfort experienced can impact on patients' ability to mobilise, puts them at risk of chest infections and potentially lengthens their hospital stay. In addition, skin damaged by moisture is at increased risk of secondary skin infections, such as candidiasis (Beeckman et al, 2015). An area of IAD is also more likely to develop a PU due to the hyper-hydrated skin being more vulnerable to friction and shear forces (Woodward, 2019). Prevention

and early monitoring of IAD are recommended, given that once established, areas of IAD can be particularly challenging to heal. When a critically ill patient develops IAD the onset is rapid and severity moderate to severe (Coyer et al, 2017), again reinforcing the requirement for early and effective preventive measures.

Anyone who has nursed patients with Category 2 PUs and MASD will identify with the difficulty in distinguishing between the two, as recognised by Peart and Richardson (2015). The impact of the misclassification of IADs on patient outcome is obvious when you consider that preventive and treatment strategies differ depending on the cause of the skin damage.

WIDER IMPLICATIONS OF IAD

Whilst some patients develop IAD in the community, others develop it whilst in hospital. If hospital-acquired, now that MASD is reportable, an investigation will look to identify whether appropriate preventive measures were in place, i.e whether this type of patient harm was preventable or whether there were any omissions in the provision of care. In addition, the investigation will examine whether an appropriate skin care regimen had been implemented. From a cost perspective, the cost of prevention is minimal when compared to the cost of treatment of IAD.

Across the NHS, the incidence rate of PU's is seen as a quality indicator. If IADs are incorrectly assessed and reported as PUs this may inflate the PU incidence rates. PU prevention measures tend to be expensive and labour intensive (Beeckman et al, 2011). If an area of IAD is assessed incorrectly, it may expose the Trust to financial reimbursement or inappropriate litigation (Beeckman, 2017). Also

relevant here is the time taken to complete incident reports for IAD, which is significant for a busy nurse.

BEST PRACTICE

To prevent and manage IAD, interventions should be targeted at both managing the incontinence and a structured skin care regimen (Bayón et al, 2013; Beeckman et al, 2015; Young, 2017). Poor management of incontinence can increase the risk of development of IAD; selection of the optimal incontinence product thus requiring careful consideration (Beeckman et al, 2015). Examining research around best practice for this aspect of care, Coyer et al (2017) concluded that the use of an evidence-based bundle reduced the incidence, and delayed the development, of IAD in critically ill patients. Woodward (2019) also recognised the importance of an assessment tool to identify IAD and differentiate it from PUs. Beeckman (2017) confirmed that any skin care regimen should incorporate: skin cleansing; skin moisturisation and the application of a skin barrier product.

Other initiatives in relation to this aspect of IAD care were researched. Sarkar (2018) described the development of a moisture lesion prescription sticker added to the prescription charts of patients with moisture lesions. This provided clear instructions around best practice as well as clear documentation.

A program to raise the profile of skin damage caused by moisture was sought, alongside some support for nurses and healthcare assistants around product selection. It was recognised that information is more likely to be retained and utilised if a resource is available to refer to.

METHOD

Following a literature review and consultation with the tissue viability clinical nurse specialist (CNS), an evidence-based assessment and management tool was drafted (Figure 2 and 3). The IAD severity categorisation tool put forward by the Global Expert Panel (Beeckman et al, 2015) was used as the basic framework. A consultation process followed across the critical care tissue viability team, critical care nurses, leadership team and the Trust’s tissue viability CNS. It was decided to remove the word ‘category’ to avoid confusion with the recently revised PU assessment tool.

The guidance was printed using good-quality pictures, alongside a factsheet to distinguish between MASD and PUs. The decision was made not to include a risk assessment tool as all critical care patients with AFID are high risk, as stated by Beeckman et al (2015). The project was part of a wider quality improvement initiative, and the governance was addressed within this.

Figure 2. Skin assessment tool for IAD (adapted from Beeckman et al, 2015)

Clinical presentation	Severity of IAD	Appearance**
	INTACT — No redness and skin intact (at risk)	Skin is normal as compared to rest of body (no signs of IAD)
	MILD – Red* but skin intact	Erythema (redness) +/- oedema
	SEVERE – Red* with skin breakdown	As above loss of epidermis of skin/skin erosion +/- skin infection +/- blisters

*Or paler, darker, purple, dark red or yellow in patients with darker skin tones

**If the patient is not incontinent, the condition is not IAD

Figure 3. Management of IAD for critical care service patients with loose stool (Bristol stool chart type 6 & 7) (adapted from Beeckman et al, 2015)

Clinical presentation	Severity of IAD	Appearance**
INTACT — No redness and skin in tact 	Prevent IAD	Use protocol to manage incontinence. Consider loperamide Cleanse: use foam cleanser Protect: use skin barrier cream Consider: rectal tube or Flexiseal
MILD – Red but skin intact 	Manage IAD and promote healing	1. Use protocol to manage incontinence. Consider loperamide 2. Complete an incident report Cleanse: Use skin cleansing foam spray (not soap and water) Protect: Use skin barrier cream and Ultrasorb pads Consider: <ul style="list-style-type: none"> • Send swab to microbiology to assess for fungal infection • Rectal tube or Flexiseal
SEVERE – Red with skin breakdown +/- skin infection 	Manage IAD and promote healing	1. Use protocol to manage incontinence. Consider loperamide 2. Complete an incident report Cleanse: Use skin cleansing foam spray (not soap and water) Protect: Use Hydrogel and Ultrasorb pads Consider: <ul style="list-style-type: none"> • Send swab to microbiology to assess for fungal infection • Flexiseal

Following consultation with the multidisciplinary team involved, a communication and engagement plan was developed and rolled out during the launch of the guide (Figure 4).

DISCUSSION

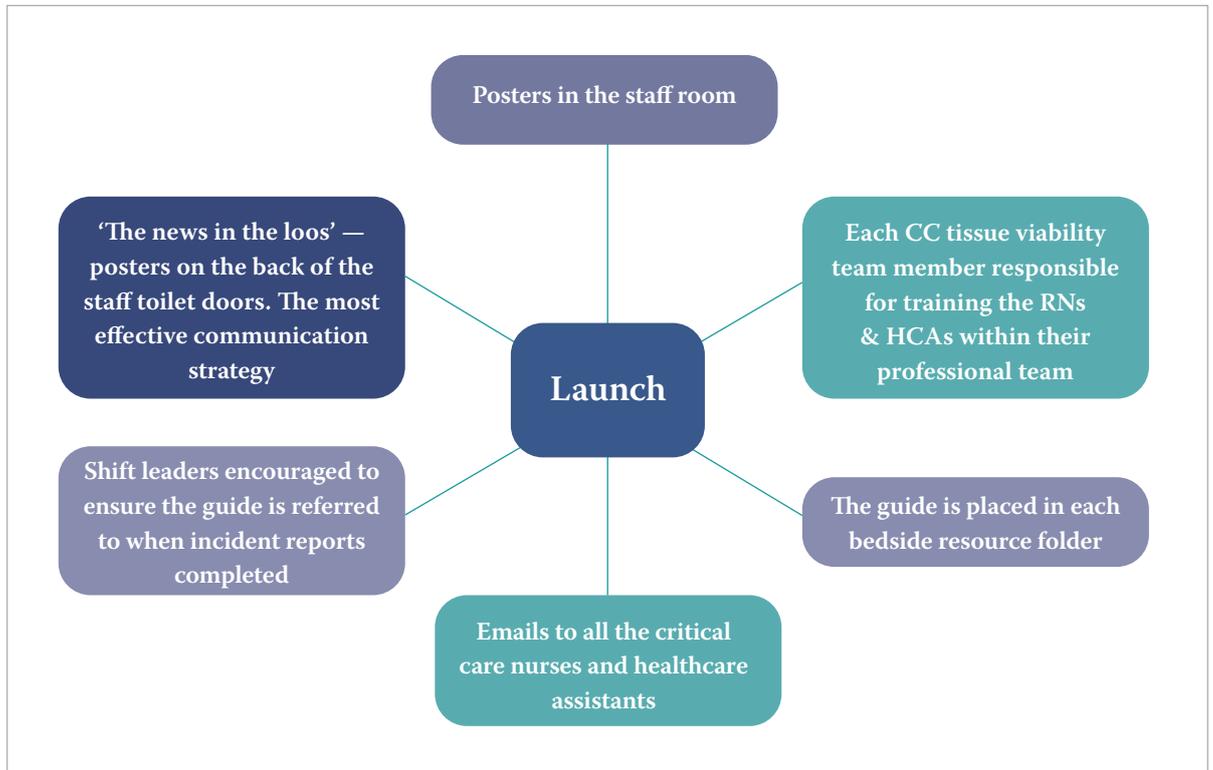
The launch training sessions were undertaken by the critical care tissue viability team in order to explain and then cascade the IAD tool across the wider nurse and healthcare assistant team. The trainers did not have ringfenced time to undertake the training and were expected to make the most of potential opportunities during their shifts. Also, due to workloads, nurses were sometimes too busy to receive training, causing the roll out to take longer

than anticipated.

Undertaking this project also highlighted another area of practice that needed improvement, in relation to the selection of appropriate incontinence products. The flat sheet incontinence pads used on the critical care unit were examination sheets, with little absorptive properties. It was felt that the plastic backing of the pads may affect the microclimate of the skin, making the skin sweat more and exposing it to further risk of shear and friction. Maintaining healthy skin integrity is a key component of prevention.

An additional factor to consider is that this was a small scale project with no budget available. This limited the ability to obtain more comprehensive

Figure 4.
Communication
and engagement plan



data around IADs on the critical care unit and hence there is no baseline data available to confirm the impact of the guide on time to heal of IAD. Van den Bussche et al (2018) developed a minimum data set for IAD. This uniform data collection instrument potentially enables adequacy of different management strategies of IAD to be compared.

An additional anticipated outcome relates to improved accuracy (and hence validity) of data collected on skin damage. Completing incident reports for MASD takes considerable time and practices to enhance robust data collection ensure wise use of nurses' time spent on this.

CONCLUSION

Nurses are familiar with using tools to assess skin damage caused by pressure. After a quality improvement initiative, the authors' critical care unit now provides nurses with an evidence-based tool to assess skin damage caused by incontinence, as well as a clear treatment plan around this aspect of care. It is currently too early to collect data following implementation of this tool, to identify the impact on incidence of IAD; however, it is hoped that enhancing practice in this area will have a positive impact on the patients' experience, as well as their comfort and dignity during the critical care stay.

WUK

REFERENCES

- Bayón García C, Binks R et al (2012) Prevalence, management and clinical challenges associated with acute faecal incontinence in the ICU and critical care settings: the FIRST cross sectional descriptive survey. *Intensive Crit Care Nurs* 28(4): 242–50
- Bayón G C, Binks R, De Luca E et al (2013) Expert recommendations for managing acute faecal incontinence with diarrhoea in the intensive care unit. *Journal of the Intensive Care Society* 14(4 Suppl):1–9
- Becker D, Tozo TC, Batista SS et al (2017) PUs in ICU patients: Incidence and clinical and epidemiological features: A multi-centre study in southern Brazil. *Intensive Crit Care Nurs* 42(55–61)
- Beekman D, Woodward S, Rajpaul K et al (2011) Clinical challenges of preventing incontinence-associated dermatitis. *Br J Nurs* 20(13):784–90
- Beekman D, Campbell J, Campbell K et al (2015) *Incontinence-Associated Dermatitis: Moving Prevention Forward*. Available at: WINT2014 (accessed 4.02.2020)
- Beekman D (2017) A decade of research on Incontinence-Associated Dermatitis (IAD): Evidence, knowledge gaps and next steps. *J Tissue Viability* 26(1):47–56
- Binks R, De Luca E, Dierkes C et al (2015) Prevalence, clinical consequences and management of acute faecal incontinence with diarrhoea in the ICU: The FIRST™ Observational Study. *J Intensive Care Soc* 16(4):294–301
- Bliss DZ, Savik K, Thorson MA, et al (2011) Incontinence-associated dermatitis in critically ill adults: time to development, severity, and risk factors. *J Wound Ostomy Continence Nurs* 38(4):433–45
- Coyer F, Gardner A, Doubrovsky A (2017) An interventional skin care protocol (INSPIRE) to reduce IAD in critically ill patients in the intensive care unit: a before and after study. *Intensive Crit Care Nurs* 40: 1–10
- Coyer F, Campbell J (2018) Incontinence associated dermatitis in the critically ill patient: an intensive care perspective. *Nurs Crit Care* 23(4):198–204
- Ousey K, O'Connor L (2017) *Incontinence-Associated Dermatitis Made Easy*. Available at: <http://bit.ly/2Oqksu4> (accessed 4.02.2020)
- Sarkar N (2018) Making moisture manageable: introducing a moisture lesion prescription sticker. *Wounds UK* 14(4) 52–7
- Peart J, Richardson A (2015) Developing a critical care bowel management assessment tool to manage faecal incontinence. *Nurs Crit Care* 20(1) 34–40
- Van den Bussche K, Verhaeghe S, Van Hecke A et al (2018) Minimum data set for incontinence associated dermatitis in adults: Design and pilot study in nursing home residents. *J Tissue Viability* 27(4):191–8
- Warren D, Kent B (2018) Determining the impact of a bowel management protocol on patients and clinicians' compliance in cardiac intensive care: A mixed-methods approach. *J Clin Nurs* 28(1–2):89–103
- Woodward S (2019) Moisture associated skin damage: use of a skin protectant containing Manuka honey. *Br J Nurs* 28(6):329–335
- Young T (2017) Back to basics: understanding moisture associated skin damage. *Wounds UK* 13(2) 56–65