

Antimicrobial Stewardship and Infection Prevention and Control in Atopic Dermatitis in Children

Stéphane Bouchoucha¹, Mataya Kilpatrick^{1,2}, and Ana Hutchinson^{1,3}

¹Deakin University, School of Nursing and Midwifery, Centre for Quality & Patient Safety Research

²The Royal Children's Hospital Melbourne³, Epworth Healthcare / Deakin University Partnership.

Atopic Dermatitis (AD), also known as eczema, is a chronic, recurrent inflammatory skin disease. There is an increasing prevalence of AD in Australia, particularly in children with up to 30% of children being affected. Colonisation of lesions by *S.aureus* is frequent and can be associated with higher severity of exacerbations and infections, necessitating topical treatment and the potential for increased use of antibiotics. One implication of frequent administration of antibiotic in children is the potential for antimicrobial resistance and the development of resistant *S.aureus*.

AIMS: The aims in this study were to explore and describe infection prevention strategies registered nurses used, nurses knowledge of management of AD, nurses understanding of safe management of antibiotics and their perceived roles in Antimicrobial Stewardship (AMS).

RESULTS: 16 nurses were recruited from the dermatology clinic, medical wards and Emergency Department of a metropolitan tertiary referral children hospital in a qualitative exploratory descriptive study.

Thematic analysis derived four themes from the data.

(1) Our role is Education, (2) Advocating for Children and Their Families, (3) Antimicrobial Stewardship – Practice to Theory Gap, (4) Self Protection and Infection Prevention and Control

There was a major emphasis from the nurses interviewed on their role as educator of patients, relatives and staff. Education was perceived as paramount to minimise the risk of infection of lesions as well as to address perceived educational gaps secondary to GP prescription of antibiotics. While nurses seemed unfamiliar with the terminology AMS, they were implementing key aspects of AMS. The minimisation of antibiotic use through emphasis on Infection Prevention and Control measures to reduce cross infection between patient and relatives was also seen as paramount.

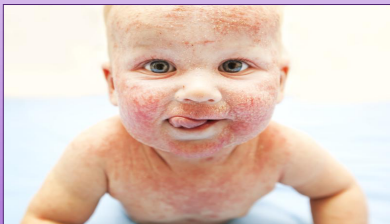
Our role is Education

Multiple participants stated that education was the most important aspect of the management of AD, and many participants stated that family education is a main part of their role as nurses.

Participants stated that:

"Particularly our role is education, so a lot of people can give instructions, can tell them [family members] the right things to do, but getting that understanding of why you do it, when to do it, how to do it." (P1)

"I think like education for families as well [is important], I think that's a big part of management because they often have no idea or they often have an idea but haven't been able to do it at home." (P6)



Antimicrobial Stewardship – Practice to Theory gap

The majority of participants in the study were unaware of the term antimicrobial stewardship. Some participants were able to identify their role in AMS after the definition of AMS was explained.

"not stewardship, I'm familiar with [the term] antimicrobial, but not stewardship" (P3)

"I know the [term] antimicrobial but not anything after that" (P6)

Participants had a tendency to underrepresent their contribution to AMS, however they did identify processes of care that supported appropriate use of antibiotics.

- (i) questioning why a child is on antibiotics,
- (ii) obtaining cultures and following up pathology results,
- (iii) educating families about when to use antibiotics and,
- (iv) introducing care strategies to minimise unnecessary antibiotic use.

"The starting point for the parents [is to identify] what is going on with that swab, and if it comes back as a HSV [Herpes Simplex Virus] and we are on an antibiotic we will [stop the antibiotics] or if it comes up as resistant.....we will flag it with them [the treating medical team]." (P11)

Advocating for Children and Their Families

Patient advocacy was perceived by the participants as being essential and a key focus of how care was delivered. Participants commented on the importance of providing: individualised care, ensuring a positive patient experience, and advocating for parents.

"A lot of it is about history taking, assessment, coming up with a plan that suits the family, and [...] a lot of it is about what you put on the skin. It also a lot about environment changing, identifying triggers." (P1)

"[...] they [parents] often find it very difficult at home, if prior to coming into hospital it hurt so much, popping a child into a bleach bath, hurts their child so much that they physically can't get them into the bleach bath." (P6)

"[...] I also think wet dressings are really difficult to do on any child, and it's really hard when doctors come in and question why isn't this done [...] and parents come in exhausted, asking for help and get labelled as non-compliant. The children are really difficult and I think sometimes we are very quick to assume non-compliance." (P11)

Self Protection and Infection Prevention and Control

Participants were aware of several sets of different guidelines for infection prevention and control. Glove use was not favoured by participants, unless they were applying creams. *S. aureus* reduction education was mentioned, by the use of bleach baths. Regarding the use of PPE, while noted as being used, many nurses stated that the use was for their own protection, particularly the protection of their clothes, rather than the protection of their patients or to minimise cross-infection.

"I would recommend bleach baths, and go through with parents staph reduction, so not sharing towels, washing hands before touching the skin, not double dipping creams" (P1)

"I would do contact [precautions], and also because I don't want to get covered in cream" (P11)

"[...] gloves and gowning usually, mainly just because you don't want to get creams and stuff on your scrubs" (P14)

"I think it's mainly because my clothes get wet and dirty, as opposed to infection prevention" (P6)

Conclusion

Nurses' perceptions of their role emphasised the need to prevent and control infections to reduce the use on antimicrobials. This is paramount to minimise AMR development in patients that might be exposed to a multitude of antibiotics during their lifetime. Poor knowledge of AMS while implementing many aspects is concerning as it might lessen perceptions that nurses have a role in AMS and need to be addressed by future interventions.

References

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