The impact of dupilumab on atopic dermatitis flares: a retrospective data analysis

Dr Liana Abuesh-shaer BMBS (Hons) (Resident)
liana.abueshshaer@mh.org.au

Associate Professor Gayle Ross MBBS (Hons) FACD
Dermatologist, Royal Melbourne Hospital
Head of Dermatology Research
Associate Professor, Department of Medicine, University of Melbourne
gayle.ross@mh.org.au

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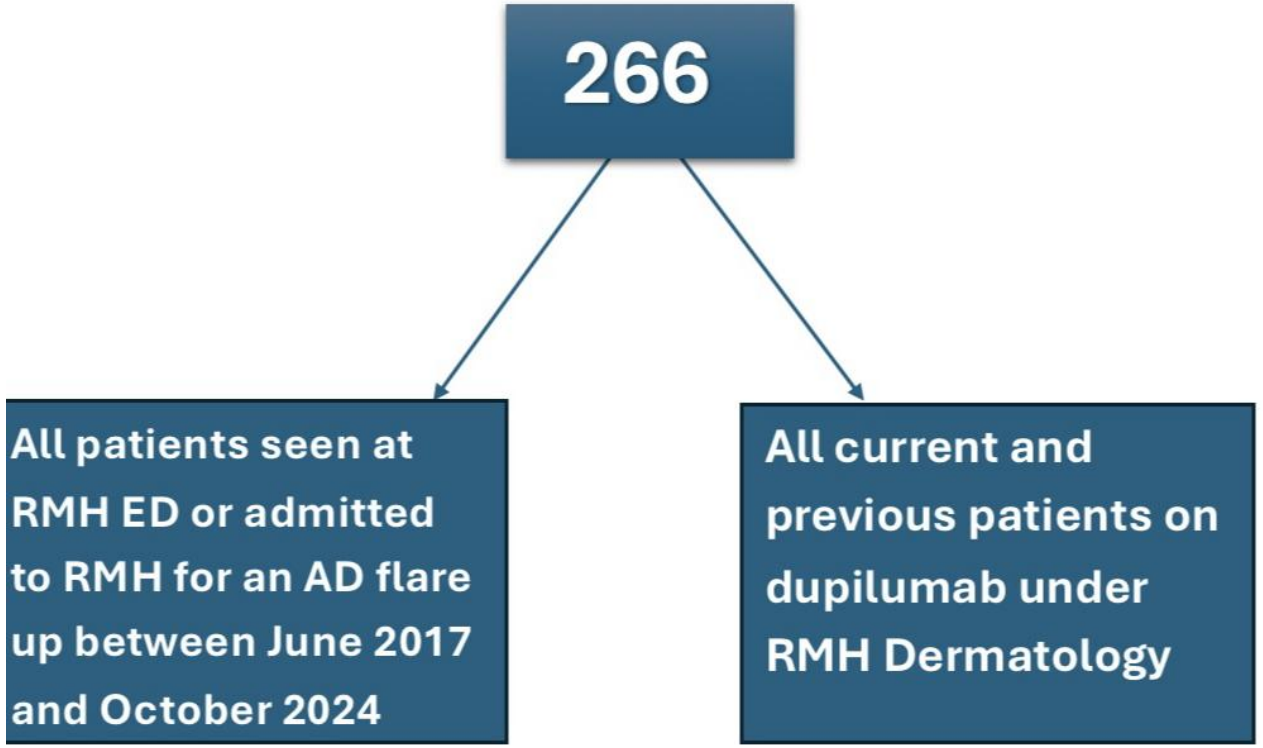
Dupilumab

- A biologic medication which blocks interleukins 4 and 13 effective in the management of atopic dermatitis (AD)
- It was introduced to the Pharmaceutical Benefits Scheme (PBS) in March 2021
- Dupilumab is an expensive drug
- The aim of our study was to provide evidence for the clinical effectiveness of the drug and its cost effectiveness in reducing AD complications to highlight the importance of introducing dupilumab early in AD management

Data collection

Hospital events recorded retrospectively for each patient included **:**

- ED presentations
- Hospital admissions
- Outpatient encounters (date of dupilumab commencement)



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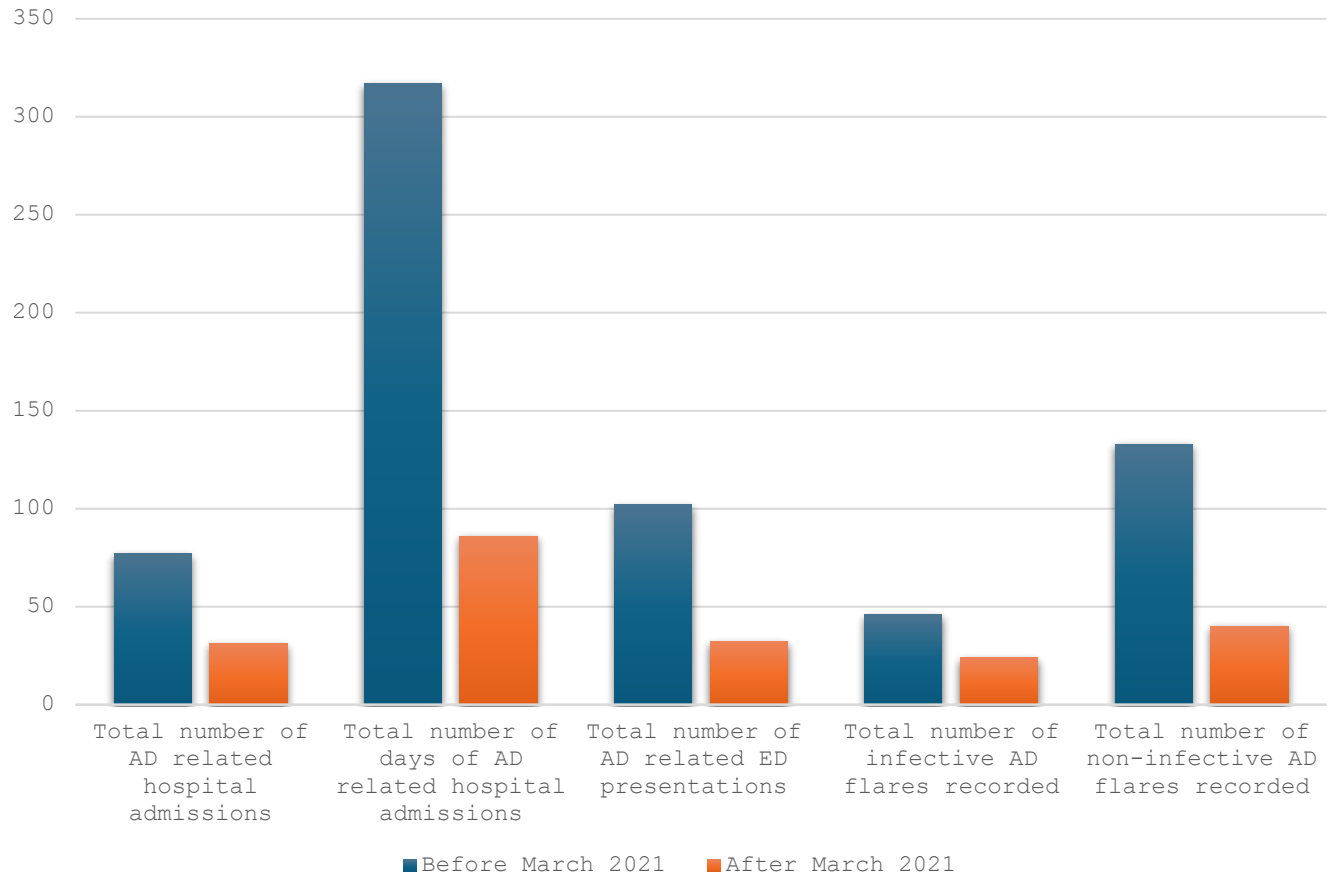
Results

	Before March 2021	After March 2021	Percentage reduction (%)
Total number of AD related hospital admissions	77	31	59.74
Total number of days of AD related hospital admissions	317	86	72.87
Total number of AD related ED presentations	102	32	68.63
Total number of infective AD flares recorded	46	24	47.83
Total number of non-infective	133	40	69.92



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Cost

The following shows a calculation of the rough costs (as per the official Medicare website as of 2024-2025) of AD-related hospital events based on the data collected

Patient classification type	Estimated average costs for 2024-2025 (AUD)
Emergency department: non-admitted	592
Emergency department: admitted	1,537
Overnight: shared ward	783

Total costs of AD- related hospital events calculated:
Before March 2021: 426,944 AUD
After March 2021: 133,929 AUD
Costs reduced to about a third since the introduction of dupilumab!

These costs exclude the costs of any inpatient investigations and management methods used such as steroids and intravenous or oral antibiotics or antivirals, which further add to the financial burden of AD

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Interestingly….

Out of the 266 patients in the study:

- Only 5 patients presented to ED or were hospitalised for an AD flare after commencing dupilumab
- In only 2 patients of the 5, dupilumab had been commenced over 6 months prior to the hospital event (time required to see significant effects from dupilumab)

Patient number (anonymised identity number as per data collection sheet)	Time after commencing dupilumab (Months)	Indication for ED presentation or hospital admission
7	1	Infective AD flare
53	13	Non-infective AD flare
153	0	Non-infective AD flare
172	1	Non-infective AD flare
208	39	Infective AD flare

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Limitations

A small group of patients was provided with compassionate supply of dupilumab prior to the introduction of the drug under PBS which may have influenced the study

Some patients may have commenced treatment or been followed up or had AD-related hospital events outside of RMH, either under a private dermatologist or at other hospitals or at the Royal Children's hospital before transitioning to adult care

Electronic medical records commenced in 2017 and therefore the documentation of some of the hospital events or clinic encounters may have been lost and excluded from the study

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Conclusion

The study demonstrated:

- Significant reductions in AD-related hospital events following the introduction of dupilumab
- Significant reduction in the cost of AD-related complications to the healthcare system
- The overall clinical and cost effectiveness of dupilumab

The study was performed on a small scale, and it would be interesting to repeat this on a larger scale to further support the importance of the early introduction of dupilumab in AD management

Thank you!

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