

Correspondence

A population-based cohort study of atopic eczema among young adult males in Singapore

Eczema is predominantly a skin disease manifesting in childhood but may affect up to 10% of adults.¹ Adult eczema is believed to be different from childhood eczema and has a unique phenotype among Asians.² The population trends of adult eczema are increasingly being studied. We aim to add to this growing knowledge by determining the population prevalence of adult eczema and its recent trends in Singapore, a high-income Asian country with one of the highest skin disease burden in the world in terms of years lost to disability.³

Singapore has a predominantly conscript army, and all adult males are required to undergo a baseline medical screening prior to enlistment. Retrospective analysis of data, with diagnostic codes of eczema during pre-enlistment screening from January 1, 2010, to December 31, 2014, was retrieved from the military electronic medical records. Eczema severity was graded as mild, moderate, or severe according to extent and functional impact. For moderate to severe cases, subjects were further assessed by specialists.

Yearly prevalence of eczema from 2010 to 2014 was calculated based on the population cohort conscripted for that year from January 1 to December 31. The total number of individuals diagnosed with eczema was divided by the total number screened during that year to obtain the prevalence. The trend in the period prevalence over 5 years was assessed with logistic regression trend test⁴ to evaluate for any significant trends over time.

Among the 103,243 adult men screened from January 1, 2010, to December, 31 2014, a total of 10,077 had eczema, giving a 5-year period prevalence of 9.8%. The majority of them had mild eczema (74.1%), while 20.8% and 5.0% of them had moderate and severe eczema, respectively. The median age was 20 years old. The majority of the eczema cohort was

Chinese (85.2%), followed by Malays (7.3%) and Indians (4.9%). This contrasted with the racial distribution of 20-year-old males in the Singapore Population Census 2010: Chinese (70.6%), Malays (19.3%), and Indians (8.4%).⁵

The prevalence of eczema ranged from 11.9% in 2010 to 7.9% in 2014 (Table 1). This decreasing trend from 2010 to 2014 was statistically significant by regression trend test ($p = 0.039$). However, the proportion of moderate to severe eczema cases was significantly increasing over the same period ($p = 0.033$), from 22.7% in 2011 to 28.9% in 2014.

The prevalence of adult eczema of close to 10% is similar to developed societies such as Japan⁶ and Scandinavia.⁷ The decreasing trend is in parallel with recent prevalence rates of eczema in young children among previously high-prevalence countries in developed countries, which suggests a shift in disease patterns worldwide.⁸ A disproportionately lower number of Malay individuals with eczema suggests differing genetic susceptibility among the various racial groups. Although there was an overall decreasing prevalence trend for eczema, there was an increasing trend of moderate to severe eczema cases. For individuals with moderate to severe disease, a comprehensive tertiary referral system for disease management in the military has been instituted to ameliorate disease burden.

The limitations of study are the narrow age range, a short 5-year period, and the retrospective nature. However, the utilization of data from a military database allows comprehensive understanding of the epidemiology and disease burden of eczema. With integrated national electronic health records in the pipeline, future longitudinal cohort studies leveraging this system may further shed light on disease characteristics and progression of adult eczema.

In summary, we need to be cognizant of a possible persistent burden of moderate to severe eczema despite an observed decreasing prevalence trend.

Table 1 Period prevalence and severity of eczema from 2010 to 2014

Year	Number of adult males (A)	Number of cases diagnosed with eczema (B)	Prevalence % (C) = (B)/(A) * 100%	Number of cases with moderate to severe eczema (D)	% with moderate to severe eczema (E) = (D)/(B) * 100%	Population % with moderate to severe eczema (F) = (D)/(A) * 100%
2010	19822	2359	11.9	554	23.5	2.8
2011	21617	2174	10.1	494	22.7	2.3
2012	20755	1897	9.1	500	26.4	2.4
2013	20680	2032	9.8	592	29.1	2.9
2014	20369	1615	7.9	466	28.9	2.3

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