



A comparison between dermatological conditions affecting medical inpatients at a tertiary hospital in Kolkata, India, to those in Cambridge, UK

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Summary:

In this cross-sectional comparison between a developing and a developed country, I collated information regarding the dermatological diseases present in 50 medical inpatients in a tertiary hospital in India during my elective, and 50 patients in the United Kingdom upon my return.

The institutions and methods:

The Seth Sukhlal Karnani Memorial Hospital and the Institute of Post Graduate Medical Education & Research (SSKM Hospital and IPGMER) is a tertiary referral government hospital in Kolkata in the state of West Bengal, India. It is the oldest general hospital in India and was an incredible environment in which to experience medicine. Under the supervision of the Professor of General Medicine, Professor Niladri Sarkar, I attended daily morning ward rounds for three weeks, and spent afternoons taking histories and examining the wide variety of medical inpatients in the Mackenzie Ward (Male) and the Clare Ward (Female), whilst gathering information for my project. In comparison, I utilised the electronic medical system to collate information on dermatological conditions that had been identified in 50 medical inpatients in Addenbrooke's Hospital, Cambridge. Below is a sample from the Excel spreadsheet I utilised, which shows the most relevant International Classification of Diseases (ICD-10) code for each condition - that I ascertained through this website

<https://www.nuemd.com/icd-10/codes>.

N.o.	Dermatological condition	ICD-10 code	ICD-10 name	Concurrent diseases
1	Bilateral lower limb ulcers	E11.621	Type 2 diabetes mellitus with foot ulcer	Vascular manifestations of diabetes, TB
2	Purpuric spots in abdomen	D69	Purpura and other hemorrhagic conditions	Dengue fever
3	Tinea capitis	B35.0	Tinea barbae and tinea capitis	Alcoholic liver disease
4	Psoriasis	L40	Psoriasis	Epilepsy
5	Tuberous sclerosis	Q85.1	Tuberous sclerosis	Fever of unknown origin
6	Salt and pepper skin	L81.9	Disorder of pigmentation, unspecified	diffuse systemic scleroderma
7	Scarring alopecia	L66	Cicatricial alopecia [scarring hair loss]	SLE

Sample of the spreadsheet for the tertiary Indian hospital

N.o.	Dermatological condition	ICD-10 code	ICD-10 name	Concurrent diseases
1	Polycythaemia	D75.1	Secondary polycythemia	COPD, DM, OA, pneumonia
2	Hyperpigmentation	L81.9	Disorder of pigmentation, uns	CKD
3	Head wound	S00.01	Abrasion of scalp	CML
4	Pressure sores	L89	Pressure ulcer	Severe dementia, Alzheimer's disease
5	Venous insufficiency	I87.2	Venous insufficiency (chronic)	MGUS
6	Bruising	R23.3	Spontaneous ecchymoses	Huntingdon's disease
7	SCC	C44.92	Squamous cell carcinoma of s	Pulmonary fibrosis, AF

Sample of the spreadsheet for the tertiary English hospital

Results and conclusions:

Differences

Overall, the patient demographic was markedly different in the two populations, with patients in the Indian hospital of an average age of 47.52 and in the United Kingdom (UK) hospital, an average age of 74.22. This may reflect the greater and thus earlier burden of disease in developing countries, and also the fact that India has a larger proportion of young people with 28% of the population between the ages of 10-24, in comparison to the UK's 18%¹. It may also be due to the fact that the average life expectancy is lower in India - at 68 for females and 65 for males - in comparison to the United Kingdom's 83 and 79 respectively².

In terms of differences in dermatological disease, the utilisation of the PivotTable function in Microsoft Excel revealed many interesting differences in the two countries. The most prevalent condition in Indian inpatients was *Tinea capitis* (6 patients), whilst in English inpatients it was squamous cell carcinoma, bruising and cellulitis (with 5 patients in each category). The predominance of *infectious* causative agents for dermatological disease in the Indian hospital was evident, and further supported by the fact that candidiasis and scabies were the next most prevalent conditions.

Another notable difference in the analysis was that there was a greater variety of dermatological pathology in patients in the Indian hospital. There were 32 different conditions noted in the Indian cohort, in comparison to 18 in the UK group. Discussions with colleagues resulted in the hypothesis that this may be the case due to the reduced availability of specialist clinics in India, which results in a greater proportion of patients presenting to medical inpatients. This meant that diseases were more poorly controlled and thus presented with their complications in India - for example, I saw a case of uncontrolled systemic lupus erythematosus (SLE) encephalitis, and a previously unknown case of tuberous sclerosis that presented for the first time to hospital with a fever of unknown origin.



A 27-year old man with the facial angiofibromas of tuberous sclerosis

Similarities

There were some dermatological conditions that were consistent in both countries – for example, candidiasis of the skin (3 patients) and secondary polycythaemia (1 patient). This highlights that certain dermatological diseases are invariably present in all populations to some extent, and should always be considered as a differential.

Serendipitously, the number of females (27) and males (23) were consistent in my samples in both hospitals.

Learning points

Dermatological conditions in the ICD-10 framework are under a specific category named 'Diseases of the skin and subcutaneous tissue', or the 'L-category'. I soon realised that dermatology is far broader than the limits that this framework sets, with many other types of skin pathology being categorised in other chapters e.g. *Tinea capitis* in the infection chapter, and squamous cell carcinoma in neoplasms.

Although restrictive in some situations, the ICD-10 code set also highlighted several subcategories of conditions that in hindsight I would have liked to explore further– for example, the various subtypes of psoriasis, or the specific location of a lesion on the face.

It was perhaps the qualitative aspects of my project where I spoke to patients and families, and then discussed them with medical colleagues, that allowed me to understand the burden of their dermatological disease. The personal story of a man with leprosy was shunned by his community was very poignant and emphasised that he was more than just a number in my study.

I would like to use the large amounts of information I collected in my project to complete a more formal assessment of the risk factors and predisposition for various diseases, and would also like to add complexity to any future studies I complete by accepting patients with multiple dermatological pathologies.

References:

1. The power of 1,8 billion: adolescents, youth and the transformation of the future. (UNFPA, 2014).
2. Organisation mondiale de la santé. World health statistics 2015. (World health organization, 2015).

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