The Role and Impact of Dermatology in Inpatient Care: a retrospective chart review

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Introduction

Dermatology is primarily a non-acute, outpatient-centered clinical specialty, but a substantial number of patients need inpatient admission for adequate management. (1) A paucity of data exists concerning the utilization of inpatient dermatologic consultations. (2) Research in this area has suggested previously that dermatologic consultation changes diagnosis and treatment in more than 60% of patients in which consultation was sought. (3) Despite dermatologist consultation improving diagnostic accuracy and treatment, the level of dermatologic services provided to acute care settings is variable. Despite improvements in systemic therapy for many dermatologic conditions, inpatient care is still required for a number of patients. The struggles with diagnosis and management of common conditions by many hospital ward teams leads to the increased potential for inappropriate treatment, prolonged hospital stay and inefficient use of resources. (2)

Objectives

1. Identify the epidemiological features of inpatient dermatology patients.
2. Compare differences in outcomes including length of stay and dermatology follow up between patients who receive dermatology consultation and those who did not.
3. Examine how dermatology consultation impacts diagnosis and management.

Materials and Methods

A retrospective chart review was performed on 206 inpatient charts from Regina hospitals. The data collected from these charts included the demographics of each patient, the requesting service, the pre-and post-consult diagnosis (if consult obtained), the length of stay, change in management if applicable, and whether outpatient dermatology follow up was arranged. The de-identified data were aggregated, and statistical analysis was performed using the R version 4.0.4. Initial descriptive statistics were computed. Non-parametric test (Wilcoxon rank sum test) was performed as a test of significance to compare differences between groups who had or had not received dermatologic consultation.

Results

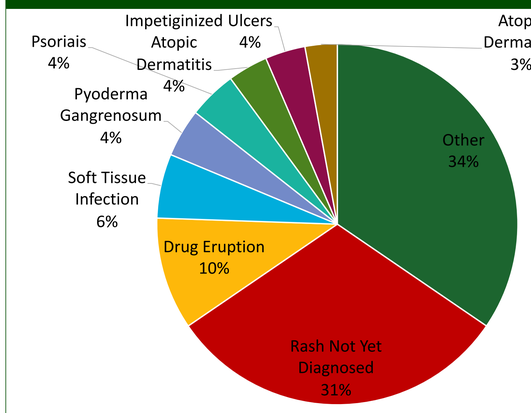

Figure 1. Provisional Diagnosis

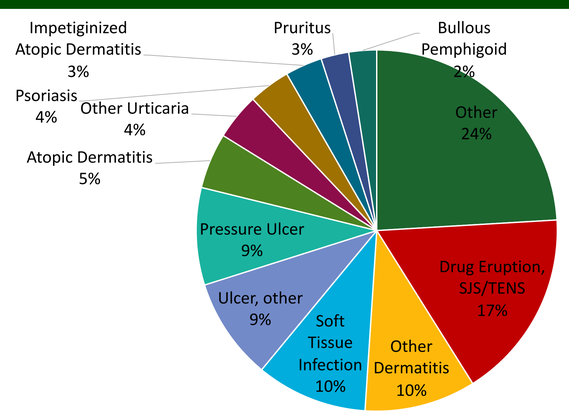

Figure 2. Discharge Diagnosis

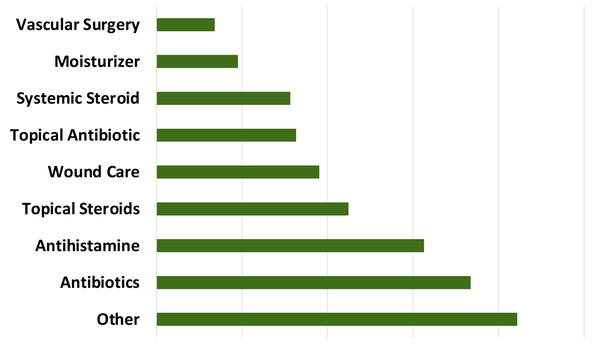

Figure 3. Pre-Consultation Management

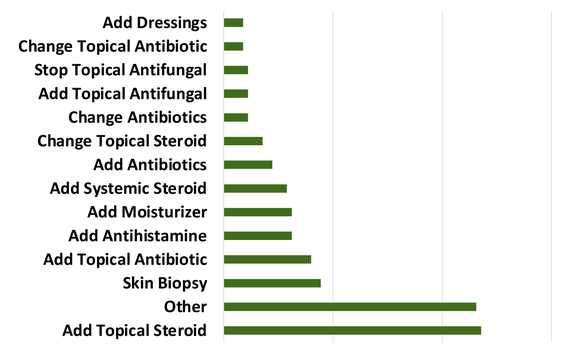

Figure 4. Post-Consultation Change in Management

Results

Of the 206 charts reviewed, 122 received dermatologic consultation while 84 did not receive consultation. Within the consult group, 49.2% were female and 50.8% were male. Within the group without consultation, 44.0% were female and 56.0% were male. The median age was 52.5 years and 55 years in the consult and no consult groups respectively, with a p-value 0.30. The median length of stay was 10.5 days and 7.5 days respectively, with a p-value of 0.03. The internal medicine service accounted for 73.8% of all dermatology consultations placed. The most frequently observed comorbidities included hypertension (10.7%) and diabetes (7.4%).

The most prevalent individual reasons for admission to hospital included sepsis (7%) and pneumonia (5%). The most common overall reasons for admission included skin and soft tissue infections including cellulitis, wound infection and infected dermatitis (12%); other conditions including pain, anaphylaxis and delirium, amongst others (12%); and other dermatologic conditions including impetiginized atopic dermatitis, drug eruption, etc. (10%).

In 68.0% of cases, dermatologist consultation resulted in a change in diagnosis. The most common provisional diagnoses by non-dermatologist physicians were, rash not yet diagnosed (31%) and drug eruption (10%) [Figure 1]. In comparison, the three most common discharge diagnoses were other (26%), including pyoderma gangrenosum, vasculitis and SWEETS syndrome, drug eruption (15%) and other dermatitis (10%) including contact dermatitis and diaper dermatitis [Figure 2].

The most common approaches to management of dermatologic conditions by the hospital ward teams included systemic antibiotics (18.4%), antihistamines (15.6%) and other modalities (21.1%) [Figure 3]. 82% of all dermatology consultations resulted in a change in management, with the most common changes being the addition of a topical steroid (23.6%), other changes (23.1%) and skin biopsy (8.9%) [Figure 4]. Of the 122 patients who received a consultation, 55 (45.1%) had outpatient follow up arranged. In contrast, only 1 (1.2%) of the patients without a consultation had outpatient follow up arranged.

Discussion

Our study demonstrated that 31% of all consultations requested by the hospital team provided minimal information, listing the reason for consultation as some variation on “rash not yet diagnosed”. This is in keeping with previous studies that have demonstrated that up to 48% of consultation requests are vague and without an appropriate differential (2). Furthermore, diagnosis and management was changed in a significant number of cases (68% and 82%), which is again in keeping with previous studies that have suggested that anywhere from 60 – 77% of dermatology consultations have resulted in a change in management (2, 3, 4). Interestingly, we had expected that the group without consultation would have the longer length of stay and yet they actually had a significantly shorter median length of stay. Finally, almost half of all the patients seen by dermatology had outpatient follow up arranged, while almost none of the patients who weren’t seen did.

Conclusions

Inaccurate diagnosis and management of dermatologic conditions in the hospitals can lead to complications, and inefficient use of resources. Improved access to dermatology services in the inpatient setting and/or improved education of non-dermatologist physicians can improve the diagnostic accuracy and treatment of dermatologic patients in hospital.

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