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Developing a dedicated Dermatology Service for allogeneic bone marrow transplant recipients

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Dear Editor, following allogeneic stem cell transplantation, graft versus host disease (GVHD) is a major cause of morbidity and mortality with the commonest organs affected being the skin and oral mucosa. Clinical presentation of cutaneous GVHD is widely variable and 13/30 patients attending a dedicated GVHD clinic were referred to Dermatologists with a specialist interest in GVHD (1). The British Committee for Standards in Haematology GVHD guidelines recommend organ-specific management and supportive care (2) recognising that early input from a Dermatologist is likely to improve clinical outcomes (3). JACIE 6th Edition standards also recommend access to certified specialist trained Dermatologists (4). However, to date, there are no reported models for the optimal delivery of a dermatology service for GVHD patients. Despite evidence supporting the benefits of dedicated dermatology clinics for organ transplant recipients (5), similar provision for stem cell transplant recipients has not been described.

We sought to address this potential unmet need by providing a dedicated dermatology service in parallel with the Bone Marrow Transplant (BMT) clinic in the Haematology outpatient department. The current BMT clinic team in our centre includes Consultant Haematologists, Specialist Trainees, BMT Clinical Fellow, Specialist nurses and a dietician.

The aims of this service development project were a) to quantify the clinical need for a dedicated Dermatology service and b) to evaluate patient reported outcomes and experience of this service using the Outcomes and Experience Questionnaire (6).

Establishing the clinical need for a Dermatology clinic

To determine the burden of cutaneous disease, a Dermatologist attended the weekly BMT clinic. This service was provided because the Haematology team felt that a significant proportion of patients attending the BMT required Dermatology review in an outpatient setting. Demographic and clinical details of cases referred for a specialist opinion were recorded between March and December 2014 to establish case-mix and to assess the nature of the clinical need in the BMT clinic.

Overall, 77 patients (48M:29F, median age 51 yrs, range 17– 72 yrs) were referred to and reviewed by the Dermatologist. Mean number of patients reviewed per BMT clinic was 8 (range 5 – 12 accounting for between 15-40% of total attenders). Further review was required in 44% (34/77) patients, resulting in 86 additional consultations. Two-thirds of individuals requiring a follow-up consultation needed >3 additional consultations. A broad range of skin conditions were diagnosed; chronic cutaneous and oral GVHD were the commonest presentations (74% and 61% respectively) with the range detailed in table 1. Dermatological interventions that were implemented are detailed in table 2.

Evaluating the Dermatology Service in the BMT Clinic

Based on these data, a dedicated dermatology service was provided in the BMT clinic from April 2015 involving a dedicated Consultant Dermatologist working with the multidisciplinary BMT team (described above).

As this was a newly configured service, we evaluated patients' views about how care was experienced and their perceived outcomes. The Outcomes and Experience Questionnaire (OEQ) is a validated tool, which brings questions about two distinct domains together into one short instrument – patients' reports of outcomes (OEQ-O score) and their experience (OEQ-E score) of care (6). Higher OEQ scores represent better outcomes and enhanced experience. A modified OEQ (11 questions) was used to evaluate the Dermatology service in the BMT clinic [Supplementary material Appendix A]. Questionnaires were self-administered in the Haematology outpatient clinic waiting area and anonymised data were collected (1st September – 15th October 2015).

Overall, there were 42 responses (response rate 42%); 27 (64%) responders had used the Dermatology service, 40% (10/25) reported seeing the Dermatologist >3 times. Median OEQ-O score was 18/20 (range 7-20). Within the Outcomes domain, 93% reported seeing a Dermatologist to be 'extremely' or 'very helpful' and 89% (23/26) reported it to be 'extremely' or 'very helpful' in managing ongoing skin problems after they left the hospital. 81% (21/26) rated their skin problem after seeing a Dermatologist as 'much better' and 46% (12/26) reported their general health to be 'much better'. Median OEQ-E score was 17/18 (range 13-18). For the Experience domain, 100% reported being involved 'as much as they wanted to be' in decisions about skin disease management [Figure 1]. Only 51% reported information provided to be 'extremely helpful'. Overall, 85% (22/26) rated the outcome of their visit to the Dermatologist in the BMT clinic as 'excellent'.

There were 36% (n=15) responders who reported never using the Dermatology service. Only 20% of non-users were aware of the service and 60% (9/15) of these felt that they could benefit from it if offered.

Discussion

This study has identified an unmet need for managing cutaneous disease, most frequently GVHD (up to 74% of referrals), in allogeneic stem cell recipients in the BMT clinic, supporting previous reports (1). A dedicated parallel Dermatology service enables accurate and early diagnosis of cutaneous and oral GVHD, which can potentially improve morbidity through appropriate and timely use of local and topical treatments. Referral to General Practitioners for skin conditions may not be appropriate for these patients when they present as the differential diagnosis is broad and the management is complicated by the concomitant medications. For this reason most patients require specialist Dermatology input. Providing a one-stop service in the BMT clinic avoids waiting times for additional consultations and offers management of the diverse range of skin diseases other than GVHD in the context of their current condition.

The benefit of our service model is prompt review by a dedicated Consultant Dermatologist with a specialist interest in GVHD, working in close proximity with the BMT team. This

negates the need for patients to be referred to a Dermatology clinic, which can lead to significant delay in diagnosis and effective management. This current model provides a comprehensive service for the patient attending the BMT clinic improving both quality of care and efficiency. There is a cost-benefit to the patient as BMT Clinics are regional centres requiring patients to travel long distances for their appointment. A one-stop service is more cost-effective as the patient receives two specialist opinions simultaneously and can have investigations, e.g. skin biopsy, undertaken at one visit avoiding the need for multiple separate appointments. A single referral to Dermatology outpatients in our Trust costs £118.05 and the one-stop service theoretically therefore resulted in cost-savings of at least £9 089.85 over nine months. In a resource-scarce NHS this could incur major benefits.

Patient-derived data is increasingly being used to evaluate new services in the NHS. The OEQ appears to be an acceptable and valid tool to evaluate the development of new services from the patient perspective. Overall, patient outcome and experience scores were high, supporting the view that a collaborative BMT clinic team can optimise management of skin disease following allograft transplantation. Future work to develop patient-focused information resources for skin disease could improve the BMT clinic experience. Data on longterm outcomes in post-transplant patients with skin conditions need to be collected to provide a more objective demonstration of the impact of this service.

Table 1: Spectrum of conditions diagnosed in post-allograft recipients

Group (percentage of total skin conditions)	Skin condition	Number of cases
Graft-versus-host-disease (GVHD) (62%)	Acute cutaneous GVHD	18
	Chronic cutaneous GVHD	57
	Oral GVHD	47
Inflammatory skin disease (22%)	Asteatotic eczema	3
	Atopic eczema	1
	Contact / irritant eczema	5
	Discoid eczema	2
	Drug reaction	5
	Grover's disease	1
	Intertrigo	2
	Melasma	1
	Photosensitivity	5
	Psoriasis	1
	Seborrhoeic dermatitis	7
	Steroid-induced side effects	2
	Urticaria	2
	Vulval dermatoses	4
	Xerosis / ichthyosis	3
Skin cancer (6%)	Basal cell carcinoma	1
	Cutaneous lymphoma	2
	Melanoma	3
	Squamous cell carcinoma	5
	Actinic keratosis	3
Skin lesion (3%)	Epidermoid cyst	2
	Lichenoid keratosis	2
	Pyogenic granuloma	2
	Sebaceous hyperplasia	2
	Seborrhoeic keratosis	5
Cutaneous infections (7%)	Atypical mycobacterial infection	3
	Fungal	2
	Molluscum contagiosum	2
	Viral*	6

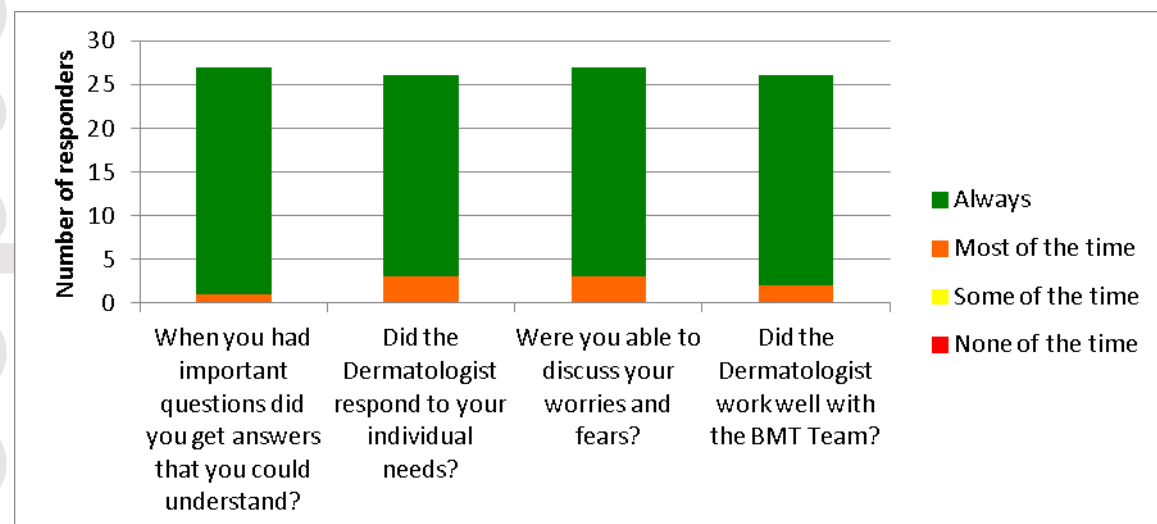
* herpes zoster virus, human papilloma virus

Table 2: Dermatological management for patients attending BMT clinic referred to the Dermatologist.

Dermatological intervention (percentage of total referrals)	Number of patients	
	New consultations	Follow-up consultations
Topical or oral intervention in the BMT clinic (83%)	62	74
Referral to joint oral physician / dermatology clinic (9%)	7	7
Referral to vulval / male genital disease dermatology specialist clinic (3%)	4	0
Minor operation (8%)	9	4
Patch testing (4%)	4	2
Phototherapy treatment* (2%)	0	4
Extracorporeal photopheresis (3%)	2	3

* Oral psoralen plus ultraviolet-A treatment (PUVA)

Figure 1: Histogram showing results for questions from the OEQ-E (Experience) domain.



BMT – Bone marrow transplant

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