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Retrospective evaluation of the referral pattern to an oral medicine unit in Ireland

R. Ni Riordain[1], K. O'Sullivan[2], C. McCreary[1]

[1]*Oral Medicine Unit, Cork University Dental School and Hospital, Wilton, Cork, Ireland;* [2]*Statistical Consultancy Unit, University College Cork, Ireland*

Objectives: The aims of this study were firstly to examine patient demographics, lesion types and referral sources to Cork University Dental School and Hospital (CUDSH) for oral medicine services and secondly, to indicate factors that could improve the efficiency of the service provided. ***Methods:*** A retrospective analysis of the clinical records for all new patients, both public and private, seen in the CUDSH oral medicine unit (n=412) in the calendar year 2007 was undertaken. For each patient the following parameters were recorded: age, gender, residence, referral source and the reason for referral including site of lesion. ***Results:*** The majority of patients were females and the majority of referrals came from general dental practitioners. The most common reason for referral was due to concern about white lesions. Raised soft tissue lesions including epuli and mucocoeles were second and ulceration, including recurrent aphthous and traumatic ulceration, was the third most common reason for referral. ***Conclusions:*** To our knowledge this is the first study to investigate factors influencing referrals to oral medicine clinics in Ireland. Based on the results presented there appears to be a considerable demand for an oral medicine service dealing with oral lesions and conditions which other practitioners consider to be outside the scope of their practice. Studies of this nature should prove to be valuable in maximising hospital resources at a time when economic factors are leading to increased financial pressure in health care funding.

Key words: Economic considerations, oral lesions, oral medicine, patient demographics, service delivery;

Introduction

The British Society for Oral Medicine defines oral medicine as "the specialty of dentistry concerned with the oral health care of patients with chronic, recurrent and medically related disorders of the oral and maxillofacial region, and with their diagnosis and non-surgical management." (BSOM, 2008) Oral Medicine services are available solely through hospitals in Ireland. There are three oral medicine consultants in the Republic of Ireland attached to the two dental schools, Cork (one) and Dublin (two), with a consultant to population ratio of 1:1,446,333 (Central Statistics Office Ireland, 2007). Patients may be referred for an oral medicine consultation for a number of reasons including; oral manifestations of systemic diseases, intra or peri oral lesions of concern that are outside the scope of the referring practitioner, orofacial pain of unusual aetiology, recurrent oral ulceration that is difficult to manage, oral ulceration of a suspicious nature and salivary gland related disease.

Patients are usually unaware of oral medicine services (Miller *et al*., 2001) and have frequently been seen previously by at least one other healthcare practitioner before being referred to an oral medicine clinic. In fact, Haberland *et al*. (1999) found that patients have, on average, previously been seen by 2.2 health practitioners prior to an oral medicine visit. Unnecessary time spent at specialists' appointments can lead to increased waiting list times for those really in need of oral medicine services, increased cost both financially to the patient and from a time management perspective for the consultant and generally can result in inadequate patient care.

In a recent article by Farah *et al*. (2008) the authors highlighted the benefit of analyzing data related to service provision as it can affect not only the delivery of services but also the allocation of staff and funding. Such studies have been carried out in the US (Haberland *et al*, 1999) and Australia (Farah *et al*, 2008), highlighting the demand for oral medicine services, however no such study has been carried out in Ireland. The aims of this study were firstly to examine patient demographics, lesion types and referral sources to Cork University Dental School and Hospital (CUDSH) for oral medicine services and secondly, to indicate factors that could improve the efficiency of the service provided. As outlined by Burke *et al*. (2007) the responsibilities of academic consultants, in an Irish context, include not only a significant teaching, research and administration remit but also a substantial service remit which is supposed to be appropriately funded. Therefore this study should prove valuable in determining best use of resources to deliver an oral medicine education and treatment programme in the current economic climate where there are financial strains in both health and educational funding.

Materials and methods

A retrospective analysis of the clinical records for all new patients, both public and private, seen in the CUDSH

Correspondence to: Dr. Richeal Ni Riordain, Oral Medicine Unit, Cork University Dental School and Hospital, Wilton, Cork, Ireland. E-mail: richeal.niriordain@ucc.ie

oral medicine unit (n=412) in the calendar year 2007 was undertaken. Three hundred and seventy eight patient records were available to be utilized for the purpose of this study. For each patient the following parameters were recorded: age, gender, residence, referral source and the reason for referral including site of lesion.

Patients ages were calculated on the date that they were seen in the oral medicine clinic. Residence was categorized as living within the city or within ten miles of the hospital, the rest of the county, other contiguous counties or non-contiguous (distant) counties.

Referral source was either from general dental practitioners (GDPs), general medical practitioners (GMPs), dental specialists, medical and dental consultants and referrals from within the dental hospital. The reason for referral was recorded from the referral letters as the site of lesion or condition as described by the referring practitioner.

Data were entered into a standard proforma and quantitative data were analysed statistically using the SPSS software package (SPSS Inc., Chicago, IL, USA). As the variables measured were categorical in nature Chi-square tests were used to examine associations between specified variables. To further explore the initially significant associations obtained pairwise comparisons were conducted employing a Bonferroni adjustment. Signifance was determined using $p<0.05$.

Table 1. Most common conditions referred to an oral medicine clinic as described by the referring practitioner

Total (n=378)	
White lesion	65 (17.2%)
Raised soft tissue lesions	60 (15.9%)
Ulceration	57 (15.1%)
Pain	54 (14.3%)
Specific conditions	50 (13.2%)
Altered sensation	20 (5.3%)
Pigmented lesions	18 (4.8%)
Other	54 (14.2%)

Table 2. Sites of oral pathology referred to an oral medicine clinic as specified by the referring practitioner

Total (n = 196)*	
Tongue	85 (43.3%)
Gingiva	32 (16.3%)
Buccal Mucosa	29 (14.7%)
Lips	22 (11.2%)
Palate	16 (8.1%)
Floor of mouth	12 (6.1%)

* No site was given in some referral letters and others were referred with no clinical lesions eg xerostomia or orofacial pain

Results

In the 12-month period there were 412 referrals to the oral medicine unit of CUDSH, 378 of which were included in this audit. Two hundred and forty eight (65.6%) of the patients were female. Most patients seen were in their 4th, 5th and 6th decades (Fig 1). The mean age of the patients was 46.6 (s.d. 18.4) years. For females the mean age was 46.5 (s.d. 18.0) years and for male the mean age was 46.9 (s.d. 19.2) years. For each age cohort, more females were referred than males.

The greatest number of referrals was from County Cork, i.e. greater than ten miles from the dental hospital, 139 (36.8%). Referrals from Cork City accounted for 132 (34.9%) with 89 referrals from contiguous counties (23.5%) and 18 referrals from distant counties (4.8%).

Two hundred and seventy nine (73.8%) of referrals came from dental practitioners with 86% of these from general practitioners, 7% from the primary care screening clinic with the dental hospital and a further 7% from

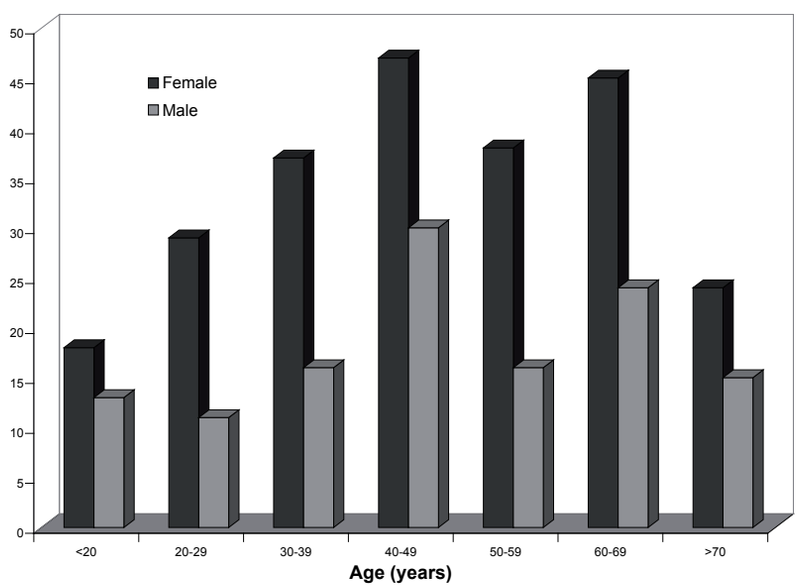

Figure 1. *Gender and age of referred patients (n)*

dental specialists. The distribution of referrals by dental specialists was as follows; periodontics 30%, orthodontics 20%, prosthodontics 15%, endodontics 15%, oral and maxillofacial surgery 10% and practices limited to orofacial pain 10%.

Referrals from the medical field accounted for 26.1% (n=99) of total referrals. The medical referral pattern was general practitioners 73%, dermatology 10%, ENT 3%, infectious disease 2%, oncology 2%, and neurology, nephrology, haematology, immunology, paediatrics and gastrointestology all 1%.

Table 1 presents the reasons prompting referral, classified according to how the referring practitioner described the condition or the lesion. The most common reason for referral was due to concern about white lesions. Raised soft tissue lesions including epuli and mucocoeles were the second most common reason for referral. Ulceration, including recurrent aphthous and traumatic ulceration, was the third most common reason for referral.

The most common sites of lesions as indicated in the referral letters are shown in Table 2. Lesions or symptoms associated with the tongue were the most common area of referrals to the oral medicine clinic. The gingiva and buccal mucosa were the next most common sites.

Statistically significant associations were found between reason for referral and gender ($p<0.001$) and reason for referral and referral source ($p<0.001$). Males were referred due to white lesions (27.7%) followed by raised soft tissue lesion (20.8%) while females were mainly referred due to ulceration (16.9%) and pain (15.7%).

Exploring the significant association between reason for referral and referral source further post –hoc analysis revealed that reasons differed between medical specialists and GDPs ($p<0.001$) and medical specialists and GMPs ($p<0.001$). Medical specialists referred primarily due to specific conditions (55.6%), while GDPs' main reasons for referral were raised soft tissue lesions (19.6%) followed closely by white lesions (18.8%). GMP referrals were predominantly due to ulceration (20.8%) followed closely by pain (19.4%).

Discussion

The information detailed in this retrospective study serves as a record of the demographics of patients seen in an oral medicine clinic whilst also giving an insight into the referral pattern to this clinic.

Patients seen were predominantly women in the 4th, 5th and 6th decades. This could indicate an increased prevalence of oral disease among females of this age, particularly immune mediated conditions such as those commonly encountered in an oral medicine setting, or that more females seek medical or dental treatment than their male counterparts. The female predominance is similar to that found by Farah *et al*. (2008) in Australia and Haberland *et al*. (1999) in the US however the age distribution was younger in our study with 5th, 6th and 7th decades more common in the studies by both Farah *et al*. (2008) and Haberland *et al*. (1999).

The lowest number of patients per age cohort was recorded in the under 20 years old category. Shulman (2005) warns of the limited relevance of studies relating to the prevalence of mucosal disease in adults to those relating to the prevalence of mucosal disease in children, therefore, perhaps the under 20 age cohort of patients should be included in a study dedicated exclusively to oral mucosal lesions in children and adolescents.

Almost an equal number of patients were referred from Cork city (34.9%) as from County Cork (36.8%). In order to improve the efficiency of the service provided due consideration is needed with regard to suitable appointment times for patients residing outside the county (28.3%), particularly with patients referred from counties over 200km in distance from the hospital. The number of follow up visits required is also of importance, as conditions in oral medicine tend to be chronic in nature. If left unaddressed these factors often lead to multiple failed appointments and becomes a significant drain on resources (Stone *et al*., 1999). As indicated in the introduction these resources are not limited to the area of patient services, as the educational needs of students with regard to clinical experience must also be met.

The oral medicine clinic, like other academic consultant delivered services, is a secondary referral centre. The majority of referrals were from dental practitioners (73%) with 84% of these referrals from general dental practitioners. This could reflect the high ratio of general dental practitioners to dental specialists in Ireland. One could also conclude that medical practitioners may refer oral lesions to medical specialists, such as dermatologists, as some lesions may be considered oral manifestations of cutaneous disease (Ramirez-Amadr *et al*., 2000). The statistically significant difference between medical specialist and both GDP and GMP referrals could be related to the referral by medical specialists of specific oral manifestations of previously diagnosed systemic conditions.

In a study conducted by Navarro *et al*. (2001) it was reported that 80% of referral letters lacked descriptions of oral lesions, symptoms, previous clinical diagnosis, and time of evolution. The inadequate descriptive nature of referrals was not as extensive in this study, however a number of referrals were made with 'intraoral lesion', 'sore area in mouth', 'problematic tongue' or 'unusual tongue' as the only clinical information given. Not only is this a source of irritation for consultants in receipt of these letters but could also lead to a critical delay in diagnosis and inefficiency in service provision. Perhaps the introduction of standardized proforma referral letters could address this issue as outlined by Djemal *et al*. (2004).

Ulceration of the oral mucosa persisting for more than three months, oral swellings that persist for more than three weeks and all red and white patches of the oral mucosa are the first three clinical features listed on the NHS Guidelines for Suspected Cancer (Department of Health, 2000). Although there are no official incidence figures for oral cancer in Ireland 250-300 new cases pre annum is a figure extrapolated from the Cancer Research UK statistics (Cancer Research UK, 2008). It is no surprise, therefore, that white lesions, raised soft tissue lesions and ulceration were the most common referrals made due to the possible potential premalignant nature of such lesions. Guidelines for urgent referrals for head and neck cancers in England and Wales were developed by the National Institute of Clinical Excellence (NICE) (Department of Health, 2000). These guidelines have established a two week referral initiative for patients with suspected cancer.

No such guidelines for rapid referrals exist in Ireland and although the value of this rapid referral system has been called into question (Jones *et al*, 2001; McKie *et al* 2008) the information available to practitioners from NICE regarding the signs and symptoms to aid earlier detection are invaluable.

With an increased awareness of oral cancer and the importance attached to early detection of malignancies the demand for oral medicine services will continue to be strong and the need for accurate, detailed, and appropriate referrals is paramount.

Conclusion

Patient demographics, referral sources and types of lesions were recorded and analysed in this study. To our knowledge this is the first study to investigate patient demographics, referral sources and lesion types to oral medicine clinics in Ireland. Based on the results presented there appears to be a considerable demand for a service dealing with oral lesions and conditions, falling under the remit of oral medicine, which other practitioners consider to be outside the scope of their practice. Studies of this nature should prove to be valuable in maximising hospital resources at a time when economic factors are leading to increased financial pressure in health care funding.

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