

# Provision of dental services in a dedicated clinic for HIV infected people in Greece

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**Objectives:** An observational study was carried out in order to describe the experience gained from the establishment of a dedicated dental clinic for HIV-infected people in Athens, Greece. **Methods:** Data were collected retrospectively from the files of HIV-seropositive individuals attending the dedicated clinic for a period of seven years (1997-2003) and included the following variables: demographic characteristics, transmission route of HIV disease, oral lesions, general health concerns, dental visiting behavior before and after HIV-disclosure and dental procedures, carried out during the study period. **Results:** The study patients comprised 426 HIV-seropositive individuals; 355 male (83%), 71 female (17%), mean age 40 years (range 17-76). The predominant mode of acquisition of HIV infection was sexual contact (88.5%), followed by intravenous drug abuse (3.8%), blood transfusion (2.5%) and vertical transmission (0.3%). Most of the patients attended the dedicated clinic because of direct/indirect denial of treatment by their dentist (29.1%), fear of attending their dentist (20.6%), financial constraints (17.5%), or because they were seeking specialized services (2.4%). Nearly half of the patients (46%), after they have been informed about their HIV-seropositivity, either did not attend their dentist, or did not disclose their HIV-status when they did attend. The type of 4,688 dental procedures carried out during the study period, were the same as those performed in any general dental practice, without exhibiting increased risk of post-treatment complications. Finally, a relatively low overall incidence (41%) of oral lesions was observed, due to the effect of the highly active anti-retroviral therapy (HAART). **Conclusions:** Dedicated dental clinics can play a supplementary, but substantial role in the overall management of people whose HIV-status, or HIV-related clinical problems may prevent them from obtaining treatment from general dental practitioners within Greece.

*Key words:* Attitudes, dedicated clinic, dental services, Greece, HIV, oral lesions.

## Introduction

The HIV pandemic has been with us for over two decades and it is estimated that more than 50 million people live with the disease worldwide (CDC, 2005). In the context of HIV disease, health care providers in general were obliged to reevaluate their professional duties to the patients. More specifically, dental professionals were challenged in a variety of ways: dentists should take preventive measures to minimize any potential risk of acquiring or transmitting HIV during dental procedures, be capable of managing HIV-related oral health problems and simultaneously address (although not always adequately trained) the psychological problems, commonly arising among HIV-infected patients in the course of their disease (Green, 1997).

There is a general agreement that persons with HIV disease should attend the dentist on a regular basis. The vast majority of oral health care services required by HIV-infected individuals is within the realm of a general dental practitioner and consists of routine dental care (Glick and Burris, 1997), which, contrary to the perception of a significant proportion of both dentists and the public, has not been associated with any particular risk of contracting HIV occupationally (McCarthy *et al*, 2002); furthermore, providing dental care to HIV-infected people has not been associated with any increased complication

rate (Robinson *et al*, 1992; Diz Dios *et al*, 1999) or require any modification of existing standards of care (Avery *et al*, 1999).

However, studies from different countries indicate that general dental practitioners have not been universally receptive to caring for persons with HIV; thus, very commonly, HIV-infected people express difficulties to find a dentist willing to treat them (Hardie, 1992; McCarthy *et al*, 1999; Triantos *et al*, 1999).

Consequently, the issue of establishment of dedicated clinics came to surface as an essential component in the overall care of HIV-infected people, acting as a safety net for people whose HIV-status or HIV-related clinical problems prevents them from obtaining treatment from general dentists (Robinson *et al*, 1994).

Since data on the function of HIV-dedicated dental clinics are scarce and geographically restricted, the purpose of the present study was to describe the provision of services by a HIV-dedicated dental clinic in Athens, the only one of its kind in Greece, as well as, the characteristics and dental care experiences of the patients attending this clinic.

## Patients and Methods

Data were collected retrospectively from the files of individuals known to be HIV-seropositive, attending the

dedicated clinic since its first establishment in 1997. Patients attended as a result of self-referrals or were referred by medical or general dental practitioners or from medical staff of Infectious Diseases Units of various hospitals in Athens, where they were under regular clinical and laboratory assessments for their HIV disease and HIV-associated disorders.

In the first appointment, information regarding patients' medical, family and social history was recorded, as well as details (where possible) regarding medications, hematologic, virologic and immunologic laboratory values. During the study period (1997-2003) a complete extra and intra-oral clinical evaluation was carried out by the same individual (I.P)-who was running the clinic-applying the US collaborative group diagnostic criteria. (Greenspan *et al*, 1992).

For any ensuing oral and dental problems, management considerations were made in collaboration with other University or Hospital Departments in Athens as appropriate. Special attention was given to confidentiality matters, while the long follow-up period permitted counselling of the patients regarding any ensuing legal, employment and insurance matters.

The research data of the present study were extracted from the patients' records, and included the following variables: gender, age, educational level, occupation, transmission route of HIV disease, oral lesions, general health concerns, dental visiting behavior before and after HIV-disclosure and finally, the number and type of dental procedures which were carried out during the study period.

## Results

A total of 426 HIV-infected individuals who attended the clinic over a period of seven years (1997-2003) were included; 355 (83%) males and 71 (17%) females. The mean age was 40 years (range 17-76). All the patients were of Greek origin that contracted HIV infection as residents in Greece. The predominant mode of acquisition of HIV infection was sexual contact (88.5%), followed by IV drug abuse (3.8%), blood transfusion (2.5%) and vertical transmission (0.3%). The demographic characteristics of the patients are summarized in Table 1.

The dental visiting behaviour was finally obtained for 190 (44.6%) patients (Table 2). After they had been informed about their HIV-seropositivity, almost half (46%) of the patients either did not attend their dentist or did not disclose their HIV-status when they did attend (Table 2). Of the remaining 54%, who chose to reveal their health status to their dentist, 29.1% were rejected and 24.9% were accepted for treatment.

The majority of the patients (69.6%) attended the dedicated dental facility, as a result of individual choice, having being rejected for treatment by their dentist (29.1%), or because of fear of attending their dentist (and disclosing their health status) (20.6%), financial constraints (17.5%), or because they were seeking specialized services (2.4%) (Table 2). Of those patients who were referred to the clinic (30.4%), the majority (19.6%) were referred from the Infections Diseases Units of various hospitals in Athens, 6% from support organizations, 3.6% from HIV-positive friends/partners and only 1.2%

**Table 1.** Demographic characteristics of the study patients (N=426).

<i>GENDER</i>	%
Male	83
Female	17
<i>AGE</i>	
0-19	0.25
20-39	56.98
40-59	38.3
>60	4.47
<i>EDUCATION</i>	
Un-educated	0.7
Primary school	13.6
Secondary school	11.3
High school	48.1
University	26.3
<i>OCCUPATION</i>	
Public sector	10.5
Private sector	39.7
Self-employed	23.5
Pensioner	10.5
Household	4.5
Un-employed	11.3
<i>TRANSMISSION ROUTE</i>	
Homosexual	44.5
Heterosexual	36
Bisexual	8
IV-drug users	3.8
Recipient of blood products	2.5
Vertical	0.3
Unknown	4.9

of them were referred by private dentists (Table 2).

There were 4,688 invasive and non-invasive clinical procedures, carried out over the study period (Table 3) including 1,562 fillings, 567 extractions and 180 minor oral surgery procedures. The type and frequency of oral lesions, observed in 175 of the 426 study patients (41%) are listed in Table 4, together with the ten (10) most frequent out of twenty seven (27) different general health conditions encountered among the attending patients.

## Discussion

The group of patients included in this study (426 in total) represents a substantial proportion (6.35%) of the cumulative number (6,702 in total) of HIV-positive persons (including AIDS cases) reported in Greece up to the end of 2003 (HIV/AIDS Surveillance in Greece, Hellenic Center for Infectious Diseases, 2005). The demographic characteristics of the study patients with a predominance of homosexual/bisexual males (52.5%) under the age of 40 years reflect the epidemiological picture of HIV infection in Greece (HIV/AIDS Surveillance in Greece, Hellenic Center for Infectious Diseases, 2005). The incidence of HIV infection and AIDS in Greece is relatively low, compared to other European populations, but the reported low frequency of condom use is a warning for the potential of the epidemic to expand in the future (Petridou *et al*, 2000).

The present study demonstrates the difficulties experienced by people with HIV disease in Greece in obtaining

**Table 2.** Dental visiting behaviour of 190 study patients

<i>A. Reason for attending the clinic</i>	%
<i>A1. As an individual choice because of</i>	Total (69.6)
Rejection by the dentist	29.1
Fear of attending their dentist	20.6
Financial constraints	17.5
Seeking special services	2.4
<i>A2. I was referred by</i>	Total (30.4)
Hospital medical staff	19.6
Support organization	6
HIV (+) friend/partner	3.6
Private dentist	1.2
<i>B. Before I learned my HIV status, I attended my dentist</i>	%
Occasionally/Rarely	71.9
Annually	23.4
Frequently	4.7
<i>C. Since I learned about my HIV status</i>	%
I did not attend my dentist	14.5
I did not disclose it to my dentist	31.5
I was rejected after disclosure	29.1
I was accepted after disclosure	24.9

**Table 3.** Clinical procedures carried out during the study period

<i>Clinical procedures</i>	<i>1997-2003</i>
1. Dental fillings	1562
2. Extractions	567
3. Minor oral surgery	180
4. Periodontal therapy	321
5. Scaling	640
6. X-rays	329
7. Management of dental abscess	66
8. Removal of sutures	211
9. Oral examinations	208
10. Management of pericoronitis	31
11. Root canal therapies	170
12. Laboratory investigations	240
13. Emergencies	77
14. Post-surgical complications	46
15. Biopsies	40
Total	4.688

**Table 4.** Medical conditions and oral lesions\* observed in the study patients (\* grouped as suggested by EC-Clearing-house (Anonymous, 1993). (n=175).

<i>A. ORAL LESIONS</i>	
<i>A1. Lesions strongly associated with HIV</i>	%
Candidosis (eryth. + pseud.)	33.6
Periodontal Disease	18.2
Oral Hairy Leukoplakia	8.6
Kaposi's sarcoma	2.7
<i>A2. Lesions less commonly associated with HIV</i>	
Herpes simplex virus infection	1.8
Herpes zoster virus infection	1.8
Salivary Gland Disease	3.2
Non-specific ulcers	6.8
<i>A3. Lesions seen in HIV infection</i>	
Erythema multiforme	0.45
Molluscum contagiosum	0.45
Lichenoid reactions	1.4
Aphthous-like ulcers	5.4
<i>A4. Others</i>	
Geographic tongue	2.3
Frictional/Smoker's hyperkeratosis	3.3
Mucocele	0.45
Angular cheilitis	9.55
<i>B. MORE FREQUENT MEDICAL CONDITIONS</i>	
Infection with Hepatitis B/C virus	24
Respiratory disease	13
Gastrointestinal disease	11
Blood disorder	10
Hypertension	7
Psychiatric disease	6
Allergies	5
Epilepsy	3
Diabetes	3
Renal disease	3
Others	15

dental treatment from general dental practitioners. The vast majority of the patients (71.9%) were infrequent dental attenders before their HIV-status was known, and since only 17.5% expressed overall financial constraints and 11.3% reported unemployment, it would seem there is no correlation between dental visiting behavior and their economic status.

After being informed about their HIV status, 14.5% of the patients did not attend their dentist while, 31.5% concealed their status from their dentist in order to get treatment. Of the 54% of the patients who opted to reveal their HIV-status, 29.1% were actually rejected for dental treatment. In an earlier study, (during 1990-1993), Laskaris and co-workers (1994), reported a much lower percentage (12%) of HIV-infected patients in Greece, who had actually informed their dentist about their health status. This is not surprising, as such negative attitudes for the provision of dental care to this particular group of patients have been recorded earlier among dental practitioners in Greece. Konstantinidis and co-workers (1993), reported that only 39% of the surveyed dentists located in Athens were willing to care for HIV-infected individuals, while comparable percentage (35%) was reported in 1991, in a national survey (Laskaris and Damoulis, 1993). Likewise, in a study exploring the attitudes of final year dental undergraduates in Athens, 52% of the respondents were willing to treat people with HIV disease, but only 35% of those having full AIDS (Triantos *et al*, 2000). The majority of the dentists in Greece were concerned about the negative attitudes of their non-HIV infected patients, but, when the actual dental patients were asked about their attitudes in HIV-related matters, they proved to be much more favourable (Triantos and Scully, 2001), possibly indicating a change in the attitudes of the general population in Greece.

Despite the reported unwillingness of dentists to respond to their professional duty, without doubt, in the course of HIV-disease, patients would experience dental problems, with needs to be met such as pain of dental, periodontal or orofacial origin, cosmetic concerns, dysfunction of stomatognathic system etc. which all fall within the province of general dentists. As shown in Table 3, the dental procedures carried-out in the HIV-infected patients of the study were the same as those performed in any general dental practice (dental fillings, root canal therapies, extractions, scaling etc), and importantly, no remarkable complications were reported to occur throughout the study period, in agreement with earlier studies (Robinson *et al*, 1992; Diz Dios *et al*, 1999).

Apart from the dental problems, the majority of HIV-infected patients would have at some stage of their disease oral lesions related to their HIV status, which can be particularly painful and may interfere with daily activities, hamper nutritional intake and oral administration of medications and adversely affect the patient's general health (Greenspan *et al*, 1992).

As shown in Table 4, oral lesions were observed in 175 study patients (41%), an incidence which is much lower comparing to 90.6% reported by Laskaris and co-workers (1992), at the beginning of the HIV epidemic (1986-1991). In Greece, protease inhibitors-highly active anti-retroviral therapy (PIs-HAART) was first introduced in August 1996, and most of the study patients were re-

ceiving it at least for one year. A similar low prevalence of oral lesions (36%) was recently reported among 44 Greek HIV-infected patients under PI-HAART, an effect attributed to immune reconstitution after the reduction of viral burden (Nicolatou-Galitis *et al*, 2004).

An interesting finding was that 19.6% of the referrals were derived from Hospital medical staff mainly for the provision of routine dental care, rather than for the management of concomitant oral lesions, which were routinely managed by Hospital general physicians, although many of them may not be adequately trained to play this particular role (Cruz *et al*, 1996); dentists may be more efficient than general physicians to evaluate the subtle changes of the oral mucosa that may indicate the presence of HIV infection (Cruz *et al*, 1996).

In addition, a complex medical background was demonstrated among the study patients, whose general health problems (with possible oral complications) were common, variable and co-existent; twenty seven (27) different medical conditions were recorded, of which, the ten most frequent are summarized in Table 4. Since, multiple medical conditions necessitate the simultaneous administration of multiple medications, it is obvious that the oral cavity might be the site for a number of side effects; furthermore, certain medical conditions may complicate dental procedures, as patients, may be at risk of infective endocarditis or bleeding, while the simultaneous presence of other (non-HIV) viral or bacterial infections such as hepatitis (Table 4) enhances the absolute need of strict adherence to infection control measures, already in operation in the dental unit.

## Conclusions

The aim of the present study was to report the experience gained from the establishment of a dedicated clinic for HIV-infected people in Athens. Despite the fact that the patients included in this study was a large proportion of HIV positive people in Greece, the study patients are unlikely to be representative of all HIV positive people in the country, in relation to their dental visiting behavior etc.

However, the study adequately demonstrates that although oral and dental health problems are frequently encountered in subjects with HIV disease, and despite the fact that the majority of health care services required by HIV-infected individuals is within the realm of a general dental practitioner, there are problems of availability of treatment for that group of patients, similarly to those reported from other countries (Heslin *et al*, 2001). Dedicated dental units as part of University, Hospital or other community services can play a supplementary, but substantial role in the overall management of people whose HIV-status, or HIV-related clinical problems may prevent them from obtaining treatment from general dental practitioners.

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