Prevalence of Dermatophytosis in Primary Care: An Observational Study in Mexico City

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Abstract

Background: The epidemiology of dermatophytosis in primary care centers in Mexico has not been previously documented or studied. The reports from tertiary hospitals and institutions do not represent the general population avoiding to provide an accurate diagnosis and treatment. The aim of this work was to estimate the prevalence of dermatophytosis in a primary care center.

Material and Methods: A cross-section, observational and retrospective study was done. The patient consultation database from the primary care center “Dr. David Fragoso Lizalde” from September to December 2015 was analyzed searching for patients with dermatophytosis consultation.

Results: 6922 patient files were analyzed. From them, dermatological diagnoses were found as the main cause for consultation, representing 2.8% of total patients and the median age of this group was 28.5 years (± 21.58), the highest age was 81 years and the lowest one year. The overall prevalence of dermatologic diagnosis was 2.8%. The most frequent diagnoses made were the non-specified dermatitis along with the dermatophytosis group with 18.5% each one. Within the dermatophytosis group, onychomycosis was the most prevalent (58.6%).

Conclusion: The prevalence of patients that attend primary care center for skin disease in Mexico City is very low. The number of patients referred to the dermatologist is equally low.

Keywords: Prevalence; Dermatophytosis; Primary Care Center

Introduction

Primary care is responsible for the evaluation and attention for most of the population in Mexico. Unfortunately, primary care centers are usually saturated and lack specialized doctors. Most centers are served by a general practitioner limiting specialized attention in specific areas [1,2]. The diagnosis of dermatological diseases in health centers is complicated. Firstly, because dermatological diagnoses are often difficult to perform and represent diagnostic challenge and secondly because patients are unaware of these diseases and do not usually request consultations for them [3,4]. Dermatophytosis can be diagnosed in 48% of the general population undergoing dermatologic consultation, usually associated with other diseases such as diabetes mellitus and arterial hypertension [5]. The prevalence of this disease in primary care centers of Mexico City has not been previously reported.

The aim of this work is to estimate the prevalence of patients with dermatophytosis in a general consultation of a primary care center in Mexico City.

Materials and Methods

Study Design and Procedure

A single-center, cross-sectional, observational and retrospective study was designed, aimed to estimate the prevalence of dermatophytosis in patients from a primary care facility. The study was conducted between September and December 2015. For this study, we included all patients evaluated in the clinic during this period. To accomplish our objective, we reviewed the files of the patients and search for any dermatologic or dermatophytosis diagnosis. All patients gave informed consent for the consultation, no ethics committee approval was needed based on the design of the study and the Mexican health law.

Subjects

Patients coming to the “Dr. David Fragoso Lizalde” primary care attention clinic were recruited. If any dermatologic concern was determined by the primary care doctor they were evaluated in the search of dermatophytosis.

Macroscopic Evaluation

A primary care doctor with knowledge of dermatophytosis made the clinical evaluation. The clinical examination has the objective of looking up the presence of abnormalities in the feet and hands, especially the interdigital and plantar areas and to determine the presence of tinea pedis and in the toenails to determine the presence of tinea unguium. Microscopic evaluation was not made using macroscopic evaluation as the only diagnostic tool.

Statistical Analysis

Values were expressed in means and standard deviations (SD) for continuous variables and percentage (%) for categorical variables. Prevalence of macroscopic diagnosis of dermatophytosis was assessed with SPSS statistical software (SPSS Inc, version20, Ill, Chicago).

Results

A total of 6922 patients were included in the first analysis, after the initial consultation we identified a dermatologic diagnosis of consult in 199 cases. Prevalence of dermatologic diagnosis was 2.8%. 144 patients were female (72.3%), median age of the analyzed population was 28.5 years (± 21.58), we had normal distribution with a maximum age of 81 years and a minimal age of one year. Most frequent dermatologic diagnosis is show in figure 1 and few cases of pediculosis, acne and scabies were observed.

Dermatophytosis was diagnosed only in a macroscopic way and without histological or biochemical confirmation. Distribution of dermatophytosis cases were: onychomycosis (56.8%), non-specific dermatophytosis (21.6%), tinea pedis (13.5%) and tinea capitis (5.4%), the rest of the patients could not be classified in any group and were referred to a dermatologic center for assessment, diagnosis and treatment.

We did not find any difference between sex and presence of dermatophytosis in our population.
underestimating the prevalence in the study, the reason why we just evaluated lower limbs was to standardize the consultation. Even with these limitations this study brings information about a prevalent problem, with risks of complications if untreated in a general population.

Conclusions

Dermatological diagnostics are common problems in patients seeking for attention in primary care, out of them all, dermatophytosis are one of the most common problems identified. This information emphasizes the need of doctors specialized in dermatology or in the worst-case access, referral of patients to specialized dermatologic centers.

Conflicts of Interest

The authors declare no conflict of interest.

References


Discussion

This is an original study describing the distribution of patients with dermatologic diagnosis and more precisely dermatophytosis. The prevalence of this disease in our study was 18.5% which is low compared to the prevalence described for Japan (36.1%) and India (20–25%) [6,7]. This can be explained because of the way the dermatologic diagnosis was made and the people undergoing the examinations, also climate of the city could play a role, being tropical places the ones with higher prevalence of this disease [8].

The prevalence of dermatophytosis has been studied in dermatological populations [5]. This study is different due to the type of patients we studied, most of them healthy patients who go to primary assessment without the knowledge of dermatological disorders. More than half of the patients had superficial dermatophytosis. This supports previous studies in Mexico where the most frequently isolated pathogen is Trichophyton rubrum is 72% of the cases [9].

The patients evaluated in this study are mostly patients with comorbidities such as diabetes mellitus and hypertension (data not shown). It is worth noting that this condition usually occurs in this type of patients, increasing the risk of complications. This implies the need of an accurate diagnosis and treatment [10].

Our study has some limitations; the first one is that we made macroscopic evaluation of the patients. Goto T et al. [11] showed that microscopic evaluation should be used to increase the probabilities of diagnosing dermatophytosis and to guide the administration of antifungal medication. The second is that evaluation of the patients was done by family physicians, it is well demonstrated that even dermatologists have low accuracy with clinical diagnosis; this can explain the low prevalence showed in our study [12]. Another consideration is that we only evaluated lower limbs, probably

Figure 1: Distribution of dermatophytosis in the studied population.