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RECOGNITION OF ACTINIC KERATOSIS. A RETROSPECTIVE BIOPSY STUDY OF THE CLINICAL DIAGNOSTIC ACCURACY BY PRIMARY CARE PHYSICIANS COMPARED WITH DERMATOLOGISTS. EXPERIENCE IN MEXICO

ROZPOZNANIE ROGOWACENIA SŁONECZNEGO. RETROSPEKTYWNE BADANIE DOKŁADNOŚCI KLINICZNEJ DIAGNOSTYKI LEKARZY PODSTAWOWEJ OPIEKI ZDROWOTNEJ W PORÓWNANIU Z DERMATOLOGAMI. DOŚWIADCZENIE MEKSYKAŃSKIE

Andrés Tirado-Sánchez, Rosa María Ponce-Olivera, Daniela Sierra-Téllez

Department of Dermatology, Hospital General de México, México, D.F.
Corresponding author: Dr. Andrés Tirado Sánchez   *atsdermahgm@gmail.com*

Abstract
Background. Actinic keratoses (AK) are dysplastic keratinocytic lesions confined to the epidermis. Currently, the standard screening method for detecting AK is performed by a health professional.
Objectives. We seek to determine if were differences in diagnosis of AK by dermatologists (DL) and primary care physicians (PCP) in Mexico.
Material and Methods. The clinical diagnoses of PCP and DL were correlated with histopathologic diagnoses. In total, 285 cases were analyzed.
Results. DL diagnosed 90% (256/285) of the cases compared with 36% (102/285) of PCP (*P*= .001). Primary care physicians were the group with the lowest diagnostic accuracy rate.
Conclusion: Primary care physician needs to acquire sufficient knowledge of basic dermatology as well as dermatopathology. The overall accuracy of the clinical diagnosis, mainly in hyperplastic AK, depends on the clinicopathologic correlation.

Streszczenie
Wstęp. Rogowacenia słoneczne (RS) są dysplastycznymi, keratynowymi zmianami ograniczonymi do naskórka.
Obecnie, standardowe metody badań przesiewowych w kierunku wykrywania RS są wykonywane przez lekarza specjalistę.
Cel: Staraliśmy się ustalić, czy występowały różnice w diagnostyce RS przez dermatologów (DL) i lekarzy podstawowej opieki zdrowotnej (POZ) w Meksyku.
Materiał i metody. Rozpoznania kliniczne przez POZ i DL były skorelowane z rozpoznaniem histopatologicznym. W sumie analizowano 285 przypadków.
Wyniki. DL zdiagnozowali 90% (256/285) przypadków w porównaniu z 36% (102/285) POZ (*P*= 0,001). Lekarze podstawowej opieki zdrowotnej byli grupą o najniższej stopie dokładności diagnostycznej.
Wnioski. Lekarze podstawowej opieki zdrowotnej powinni pozyskać odpowiednią wiedzę na temat podstaw dermatologii oraz dermatopatologii. Ogólna dokładność rozpoznania klinicznego, głównie w hiperplastycznych RS, zależy od kliniczno-patologicznej korelacji.

Key words: actinic keratosis; clinicopathologic correlation; dermatologist; diagnostic accuracy; primary care physician
Słowa klucze: actinic keratosis; kliniko-patologiczna korelacja; dermatolog; dokładność diagnostyczna;
lekarz podstawowej opieki zdrowotnej

Introduction

Actinic keratoses (AK) are dysplastic keratinocytic lesions confined to the epidermis, which are caused by ultraviolet radiation and are one of the most common reasons for patients to consult a dermatologist, with an estimated prevalence of 7.2

million in 1993-1994 in the United States [1] and increasing to 39.5 million in 2004. [2] Lesions are treated mainly for preventing reasons (malignancy), however AK are also treated for cosmetic and symptomatic purposes. [2,3] Currently, the standard screening method for detecting AK is performed by a health professional (DL detect 83.2% of the patients with AK). [4] Unfortunately, many medical professionals other than DL may not be specifically trained in the detection of AK. [5-8].

We were interested to determine whether there are differences in diagnosis of AK by DL and primary care physicians (PCP) in Mexico.

Methods

In this retrospective study, we retrieved and reviewed the records of skin biopsy specimens submitted to the Dermatopathology department at the Hospital General de México, from June 2006 through June 2010. We will use the term "skin biopsy" as a comprehensive designation of various techniques employed to obtain specimens, as punch and excisional biopsy methods. The histopathological diagnosis was made by 2 Mexican certified dermatopathologists and was compared with the clinical data submitted by the clinician (PCP and dermatologist). All records represent slides with hematoxyllin-eosin-stained sections derived from archival material.

Data retrieval

A total of 285 skin specimens were submitted in the examined time frame by 38 physicians (35 PCP and 3 DL). No repeat excision specimens, in which the diagnosis was known, were enrolled in this study.

Comparison between clinical and histopathological diagnoses

Using the histopathological diagnosis as the "gold standard", we recorded a clinical diagnosis as correct, if the clinician listed several alternatives (eg. squamous cell carcinoma/AK/seborrheic keratosis) and AK was confirmed histopathologically. On the other hand, if only one clinical diagnosis was listed (eg. squamous cell carcinoma) and histopathologically the lesion represented another entity (eg. AK), the clinical diagnosis was considered incorrect.

Statistic analysis

DL and PCP were compared with respect to the frequency of correct diagnoses using the χ^2 test of association. Alternatively, Fisher´s exact test was used when frequencies or group sizes made χ^2 test results questionable (expected values less than 5). Percentages reported in the text are accompanied by 95% confidence intervals with the lower and upper limits in parenthesis. P values less than .05 are deemed statistically significant.

Results

The distribution of all AK types and the percentages of correct clinical diagnosis are shown in table 1.

We observed that the most commonly reported type of AK was the hyperplastic type (53/285, 18%), however, several case charts were not classified as well (220/285, 77%). The biopsy method mostly preferred for AK by DL was punch biopsy technique (245/285, 86%).

Forty seven hyperplastic AK (89%) were clinically mistaken with squamous cell carcinoma by PCP, versus 12 (23%) in the dermatologist group ($p=$ .001).

When analyzing all lesions combined, DL diagnosed 90% (256/285) compared with 36% (102/285) of PCP ($p=$ .001). Primary care physicians were the group with the lowest diagnostic accuracy rate. Of interest was the large number of cases for which only one clinical diagnosis was provided by the clinician. Primary care physician provided only one diagnosis in 237/285 cases (83%), compared with 20% of cases by the DL (58/285) ($p=$ .001).

Type of actinic keratoses	n= 285 (%)	Correct diagnoses PCP/DL (%)	*P* value
Actinic keratosis not specified.	220 (77)	94 (43)/207 (94)	0.001
Hyperplastic	53 (18)	6 (11)/41 (77)	0.001
Atrophic	5 (2)	0 (0)/3 (60)	NS
Bowenoid	3 (1)	0 (0)/2 (67)	NS
Pigmented	2 (1)	2 (100)/2 (100)	NS
Acantholytic	1(0.5)	0 (0)/0 (0)	NS
Lichenoid	1 (0.5)	0 (0)/1 (100)	NS

PCP = Primary care physician. DL = Dermatologist

NS = Non significative

Table 1. Distribution of actinic keratoses types and percentage of correct diagnoses

Discussion

Physician office visits for the diagnosis of AK and nonmelanoma skin cancer is increasing, [9-11] such tendency is probably due to the heightened public awareness of the prevalence of precancerous and cancerous skin conditions. In 1997, 60 million of 703 million physician office visits in the United States were for skin examinations. During 1993 and 1994, 13.5 million physician office visits were recorded for AK and nonmelanoma skin cancer alone. [4] While most AK are diagnosed and treated by DL, a smaller percentage of cases are diagnosed and treated by other physician groups, including PCP. [12]

In our retrospective study, we try to determine the accuracy in clinical diagnosis of AK among DL and PCP. The present investigation provides additional information of the superior diagnostic capability of DL versus PCP in the diagnosis of AK. Numerous publications have documented a considerable disparity in the clinical diagnostic accuracy of DL and nonDL for even the most common diseases. [1,4-8,10,13,14] In the current study, we compared the clinical diagnoses made on patients that came to our consultation with the histopathological diagnoses. The clinical diagnoses of a total of 285 physicians referring cases to our Dermatopathology department were evaluated.

Several previous studies reported on the accuracy of the clinical diagnosis of DL or nonDL, or both, using the histopathological diagnosis as the "gold standard". [4,5,10,14]

We found that DL diagnosed the majority of cases correctly compared with PCP. This can be explained by several ways; the most important explanation is by the different training requirements for DL, and their experience in the management of skin diseases. In a previous study, DL diagnosed 36% (97/270) of AK correctly versus 22% (2/9) of diagnoses made by nonDL. [5] In our study, PCP recognized only 36% (109/285) of all AK, compared with 90% (256/285) of DL.

A limitation of this retrospective study is the use of the clinical data from the charts of the patients and from the pathology requisition form as a surrogate for clinical diagnostic accuracy.

We conclude that PCP needs to acquire sufficient knowledge of basic dermatology as well as dermatopathology. This knowledge is a prerequisite to diagnose (clinically and histopathological) and even treat AK correctly. The overall accuracy of the clinical diagnosis, mainly in hyperplastic AK, depends on the clinicopathologic correlation. Several possible clinical options should be proposed by the clinician, in order to decrease the risk of diagnostic miscorrelation and even increase the usefulness of clinicopathological correlation. Failures in those areas can directly and negatively impact on physician care work and patient benefit.

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