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ORIGINAL ARTICLE

Proportion of Potentially Avoidable Referrals From Primary Care to Dermatologists for Cystic Lesions or Benign Neoplasms in Spain: Analysis of Data From the DIADERM Study[☆]



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Received 9 November 2018; accepted 7 February 2019

Available online 24 July 2019

KEYWORDS

Diagnosis;
Dermatology
Department;
Public health
services;

Abstract

Background and objective: Skin lesions are a common reason for consulting a primary care physician. Current legislation in Spain states that purely aesthetic skin problems that do not pose a health problem are not to be treated within the National Health Service. The aim of this study was to estimate the proportion of referrals from primary care physicians to dermatologists that were for cystic lesions or benign tumors and could potentially have been avoided.

[☆] Please cite this article as: González-Cruz C, Descalzo MÁ, Arias-Santiago S, Molina-Leyva A, Gilaberte Y, Fernández-Crehuet P, et al. Análisis de la proporción de derivaciones potencialmente evitables desde Atención Primaria a Dermatología por lesiones quísticas o tumorales benignas en España. Datos del estudio DIADERM. <https://doi.org/10.1016/j.ad.2019.02.003>.

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Benign skin tumors;
Referral and
consultation;
Primary health care;
Spain

PALABRAS CLAVE

Diagnósticos;
Servicios de
Dermatología;
Sistema público de
salud;
Tumores cutáneos
benignos;
Derivación;
Atención Primaria;
España

Material and methods: We consulted cases registered in the DIADERM study dataset, which is representative of dermatology practice in Spain, and collected the main diagnoses given on referring patients from primary care. A referral diagnosis was classified as potentially avoidable if it corresponded to one of the primary care discharge diagnoses listed in a consensus paper of the Andalusian section of the Spanish Academy of Dermatology and Venereology (AEDV).

Results: We collected 2171 main reasons for first-visit referrals to dermatologists; 686 of them (31.6%) were for cystic lesions or benign tumors and classified as potentially avoidable. In 478 cases (22%) the patients were discharged on the first visit. The most frequent diagnoses in such cases were seborrheic keratosis (9.3%) and melanocytic nevus (8.6%).

Conclusions: Nearly a third of referrals from primary care to a dermatologist were for cystic lesions and benign tumors and could have been avoided. A clearer understanding of our caseload can be useful for improving planning, training, and health care system management.

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Análisis de la proporción de derivaciones potencialmente evitables desde Atención Primaria a Dermatología por lesiones quísticas o tumorales benignas en España. Datos del estudio DIADERM

Resumen

Antecedentes y objetivo: Las lesiones cutáneas constituyen un motivo de consulta frecuente en Atención Primaria (AP). Aquellas que no supongan un problema de salud, sino una cuestión estética, no deben ser tratadas en el Sistema Nacional de Salud, según la legislación vigente. El objetivo de este trabajo es estimar qué porcentaje de derivaciones remitidas desde AP a Dermatología por lesiones quísticas o tumores benignos corresponde a lesiones que podríamos considerar potencialmente evitables.

Material y método: Utilizamos los diagnósticos principales de los pacientes derivados de AP, recogidos en el estudio representativo nacional DIADERM. Cada uno de los diagnósticos derivados fue clasificado como potencialmente evitable si se correspondía con alguno de los diagnósticos con criterio de alta desde AP, establecidos en el documento de consenso propuesto por la sección territorial andaluza de la Academia Española de Dermatología y Venereología.

Resultados: Se recogieron datos de 2.171 motivos principales de consulta derivados de AP como primeras consultas. De estos, 686 (31,6%) son diagnósticos que podrían corresponderse con derivaciones potencialmente evitables por lesiones quísticas o tumorales benignas. Un 22% (478) del total de las consultas fueron dadas de alta en la primera visita. Los diagnósticos más frecuentes entre estos fueron las queratosis seborreicas (9,3%) y los nevus melanocíticos (8,6%).

Conclusiones: La proporción de derivaciones potencialmente evitables a Dermatología desde AP por lesiones quísticas y tumorales benignas supone casi un tercio de las consultas. El conocimiento de la realidad asistencial de nuestro entorno puede ser útil para mejorar la planificación, la formación y la gestión sanitaria.

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Introduction

The prevalence of skin lesions is high in the general population, and they have come to figure among the main reasons for consulting primary care physicians.^{1,2} Many of these lesions are benign, having no impact on the individual's health, and care is usually sought for purely aesthetic reasons.³ Spanish Royal Decree 1030/2006 of September 15

excludes procedures and treatments that have only cosmetic outcomes from the list of services covered by the public National Health Service (NHS).⁴ Dermatology-related visits for minor lesions nevertheless accounted for up to 25% of primary care consultations in one Spanish study.³ The primary care family practitioner currently provides the first line of care in the NHS and is the one who decides whether to refer a patient to a dermatologist or not.^{5,6} The Andalusian

section of the Spanish Academy of Dermatology and Venereology (AEDV), working with the Spanish Society for Quality in Health Care (SECA), recently published a consensus paper recommending a care process for persons with cystic lesions or benign tumors.⁷

The present study aimed to estimate the percentage of primary care referrals to dermatologists for cystic lesions or benign tumors that might be avoided. The results should provide real data for assessing the magnitude of the problem nationwide and for drafting health care policies.

Material and Methods

Data were taken from the AEDV's DIADERM study of 2016,⁸ which surveyed a representative sample of dermatologists practicing in Spain. The 2224 members of the AEDV in November 2014 were stratified according to geographic area and sampled randomly so that the respondents would represent dermatologists across the country. The surveyed dermatologists reported all diagnoses made over a period of 6 days (3 days during cold weather and 3 days during hot weather). An expert coded the diagnoses according to version 10 of the International Classification of Diseases. Each patient visit was associated with a single principal diagnosis.

We extracted the diagnoses that were the main reason for a referral to dermatology by a primary care physician in the NHS. Teledermatology consultations were excluded.

A referral was classified as potentially avoidable if the diagnosis was one of those that could have been discharged from primary care, as established by the 2016 consensus paper of the Andalusian section of the AEDV (Table 1).⁷ Such cases can be discharged from primary care provided malignancy is not suspected and there is no doubt about the diagnosis, no functional impact, and no history of resistance to treatment in the case of viral infections. Referrals were not classified as potentially avoidable if they met appropriate referral criteria, such as would be the case for an atypical nevus.

A record of the primary care physician's justification for the referral was not available. An indirect indicator of a referral's appropriateness was the decision taken by the dermatologist during the first visit. We assumed that patients who were discharged on the first dermatology visit underwent no dermatologic procedure; if the dermatologist had intervened, there would have been an order for pathology and/or follow-up observation of a scar. The patients with a main diagnosis included in the consensus paper's list and who were discharged by the dermatologist after the first visit might have been referred because of a primary care physician's reasonable doubt that was resolved by the dermatologist; alternatively, their cases might constitute potentially avoidable referrals. On the other hand, if the dermatologist did not discharge the patient, the referral might also have represented either an appropriate one or poor use of resources by the dermatologist.

The DIADERM study⁸ was classified as observational non-postauthorization research by the Spanish Agency of Medicines and Healthcare Products (AEMP) and approved by the research ethics committee of the province of Granada on October 8, 2014.

Descriptive statistics (absolute frequency and percentage) were compiled and the χ^2 test was used to compare qualitative variables using Stata statistical software (version 14.2, Statacorp, Texas, USA).

Results

The DIADERM dataset included 10999 diagnosed cases in 8953 patients. Once we had excluded the teledermatology cases, the secondary reasons for consulting a physician, and the cases registered by physicians outside the NHS, there were 5089 diagnoses registered as the main reasons patients consulted a physician available for analysis. Of these, 2171 (42%) were first registered from a primary care clinic of the NHS (Fig. 1). The 2918 remaining diagnoses were excluded because they involved follow-up visits, emergency visits, or referrals from other specialists.

Six hundred eighty-six of the 2171 cases (31.6%) were classified as potentially avoidable referrals; 478 of them (22%) were discharged after the first specialist visit (Table 1). The percentage of cases discharged by the dermatologist on the first visit was significantly higher in the group of 686 potentially avoidable referrals than in the others (69.7% vs 39.1%, respectively; $P < .001$, χ^2 test). The percentages of potentially avoidable referrals (Table 2) were similar in all the geographic areas of Spain ($P = .74$, χ^2 test).

The largest group was made up of potentially avoidable referrals for seborrheic keratosis, which accounted for 201 visits (9.3%). Seborrheic keratosis was also the discharge diagnosis reached most often by dermatologists, who recorded it after 180 out of the 201 first visits (89.6%) that named this condition as the main reason for consulting the specialist. Referrals for melanocytic nevi and the group of lesions comprised of common or plantar warts or molluscum contagiosum infections accounted for 8.6% and 6.2% of the referrals, respectively. However, the percentages of first-visit discharges by dermatologists were somewhat lower for these 2 referral diagnoses, at 63% in both cases (118 out of 187 and 85 out of 135 referrals, respectively).

Discussion

This study found that approximately 32% of referrals from primary care to dermatology in the Spanish NHS concerned the conditions included in the Andalusian consensus paper on cystic lesions or benign tumors⁷ and might therefore be classified as avoidable referrals in the absence of diagnostic doubt or functional impact. Seborrheic keratosis, melanocytic nevus, the group comprising common or plantar warts and molluscum contagiosum, and acrochordons and cysts account for 28.6% of the skin conditions referred from primary care to dermatology. As expected, a

Table 1 Criteria for Discharge From Primary Care Without Referral to Dermatology and Criteria for Treatment by a Dermatologist

Diagnosis	Discharge From Primary Care	National Health Service Dermatologist Can Treat
Melanocytic nevus	Common melanocytic nevus not meeting ABCDE criteria	Diagnosis is in doubt, malignancy is suspected
Seborrheic keratosis	Clinically typical seborrheic keratosis	Diagnosis is in doubt, malignancy is suspected
Dermatofibroma	Clinically typical dermatofibroma	Diagnosis is in doubt, malignancy is suspected
Acrochordon	Clinically typical acrochordons with no indication for surgery (ie, not large lesions or those in locations that objectively cause functional problems, such as the perianal area or the groin)	Diagnosis is in doubt, malignancy is suspected
Vascular lesion	Ruby points, venous lakes, spider veins	Diagnosis is in doubt, malignancy is suspected, neonatal lesions, pyogenic granuloma, angiokeratoma
Cyst	Small, asymptomatic epidermal cyst with no functional impact	Diagnosis is in doubt, malignancy is suspected
Lipoma	Firm diagnosis, no suspicion of malignancy, small lesions with no functional impact	Diagnosis is in doubt, malignancy is suspected, neonatal lesions, pyogenic granuloma, angiokeratoma
Common or plantar wart, molluscum contagiosum	Asymptomatic common warts or molluscum not resistant to initial treatment	Diagnosis is in doubt, resistance to treatment, functional impact
Onychocryptosis (ingrown nail)	After effective treatment (confirmed by clinical inspection and pathologic examination)	Recurrence after surgical removal, uncertain diagnosis
Milium cyst	Firm diagnosis, no suspicion of a neoplastic process	Diagnosis is in doubt, malignancy is suspected
Sebaceous hyperplasia	Firm diagnosis, no suspicion of a neoplastic process	Diagnosis is in doubt, malignancy is suspected
Fibrous papule	Firm diagnosis, no suspicion of a neoplastic process	Diagnosis is in doubt, malignancy is suspected
Syringoma	Firm diagnosis, no suspicion of a neoplastic process	Diagnosis is in doubt, malignancy is suspected
Xanthoma	Firm diagnosis, no suspicion of a neoplastic process	Diagnosis is in doubt, malignancy is suspected

Abbreviation: ABCDE, asymmetry, border irregularity, color that is not uniform, diameter > 6 mm, evolving size or shape or color.

^a Source: Moreno-Ramírez et al.⁷

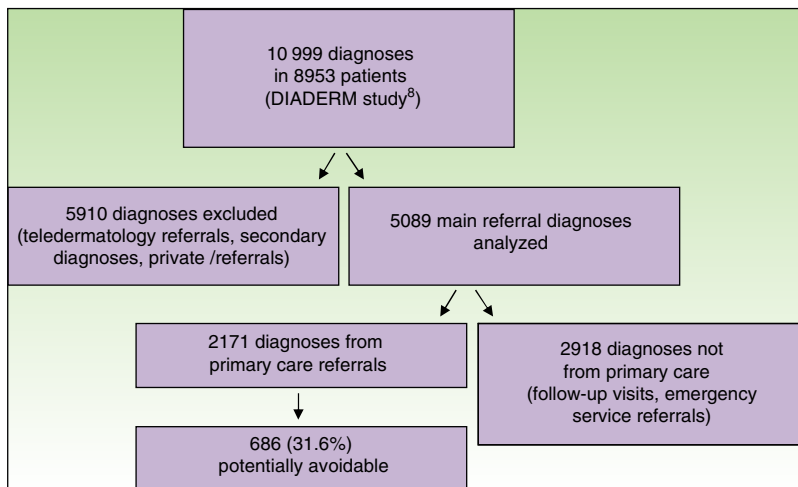


Figure 1 Flow chart of case selection.

Table 2 Absolute and Relative Frequency of Initial Primary Care Referrals and Dermatology Discharges for Diagnoses Listed in the Andalusian Consensus Statement⁷

Diagnosis	Potentially Avoidable Referrals, n (%) ^a	Cases Discharged After a First Dermatology Visit, n	Cases Discharged After a First Dermatology Visit, % of Total ^a	First-visit Dermatology Discharges, % of Main Referral Diagnosis ^b
Seborrheic keratosis	201 (9.3)	180	8.3	89.6
Melanocytic nevus	187 (8.6)	118	5.4	63.1
Common or plantar wart, molluscum contagiosum	135 (6.2)	85	3.9	63
Acrochordons	52 (2.4)	39	1.8	75
Cyst	45 (2.1)	10	0.5	22.2
Vascular lesion	25 (1.2)	18	0.8	72
Dermatofibroma	13 (0.6)	8	0.4	61.5
Onychocryptosis (ingrown nail)	12 (0.6)	8	0.4	66.7
Lipoma	7 (0.3)	4	0.2	57.1
Fibrous papule	3 (0.1)	3	0.1	100
Xanthoma	3 (0.1)	2	0.1	66.7
Sebaceous hyperplasia	2 (0.1)	2	0.1	100
Milium cyst	1 (0.05)	1	0.05	100
Syringoma	0 (0)	0	0	0
Total	686 (31.6)	478	22	69.7

^a The percentage is of all 2171 referrals.

^b The percentage is of the number shown in the second column.

significantly higher proportion of visits for these conditions were discharged by the dermatologist after the first visit, suggesting that they may have been potentially avoidable. Such referrals for minor skin problems consume human and material resources but provide scant added value in terms of the population's health and may even violate current legislation.⁵

The consensus statement of the Andalusian section of the AEDV⁷ and the model for the practice of dermatology issued by the department of health of the government of Catalonia (Departament de Salut, Generalitat de Catalunya)⁹ are examples of efforts intended to increase the ability of primary care physicians to resolve benign lesions and skin conditions that are not complex in order to improve efficiency.

The percentage of dermatology referrals from primary care that our study identified as potentially avoidable was similar to the percentage of requests for treatment for aesthetic purposes in a study by Macaya-Pascual et al³ in an outpatient clinic of the NHS in L'Hospitalet de Llobregat, near Barcelona. Similarly, a study by Lowell et al² reported that 29.4% of referrals to a dermatologist were for benign tumors.

Avoidable referrals in large numbers put pressure on the routine practice of dermatology, taking time that could be dedicated to other skin diseases that have greater impact on health.⁵ According to the previously cited study by Macaya-Pascual et al,³ the diagnosis and treatment of these conditions in a single dermatology practice in a Spanish outpatient clinic that attends 7500 visits each year would cost some €317 000 per year. This figure points to a need for strategies to make the system more efficient nationwide by applying consensus-based recommendations, such as are outlined in the Andalusian statement,⁷ and

by improving contact with primary care physicians through tele dermatology.¹⁰ This approach, which is already in place in many centers, offers an effective way to manage communication between care levels and would probably help to reduce the number of potentially avoidable referrals.¹¹

Our study's main strength is that it is based on the DIA-DERM registry, which reflects a stratified random selection of cases from dermatologists working in all the territories where members of the AEDV practice.⁸ The information, therefore, is a representative reflection of dermatology practice throughout Spain.

An important limitation of the study is that we have no information about the circumstances justifying the primary care physicians' referrals, which would be appropriate in the presence of diagnostic doubt or functional impact. Therefore we can only speculate on the maximum impact of applying the recommendations of the Andalusian consensus statement.⁷ Cases discharged because they were resolved during the first visit to the dermatologist may have involved either avoidable referrals or appropriate ones (because of the primary care physicians' doubts). Cases in which the dermatologist scheduled a second visit or a surgical procedure might also have been either appropriate or inappropriate use of resources. Thus, it is possible that the proportion of truly avoidable referrals, according to the definitions of the consensus statement,⁷ might be as low as 0% or as high as 31.6% of first visits to the dermatologist. More likely, however, the real percentage lies between the extremes. Another limitation derives from our study's focus on cystic lesions and benign tumors (including common warts, molluscum contagiosum, and onychogryphosis as listed by the Andalusian recommendations⁷). If a similar model were applied to all the reasons for referral, including infectious

and inflammatory conditions, the potential impact could be greater. Finally, although the Andalusian section of the AEDV's consensus statement was drafted with the collaboration of the SECA and knowledgeable, clinically experienced dermatologists, it must be admitted that neither primary care physicians nor patients were consulted. Nonetheless, administrators of public agencies, who are charged with representing patients' needs, did participate. In any case, we believe that future consensus statements should involve both the aforementioned stakeholders in the care process.¹²

In conclusion, this is the first study to analyze potentially avoidable referrals for cystic lesions and benign tumors from primary care to dermatology throughout Spain. The findings show that these referrals account for a high proportion of the dermatology caseload and that the most common diagnoses are seborrheic keratosis, melanocytic nevus, and the group comprising warts and molluscum contagiosum. We have provided information that can be useful for health care planning and training to optimize available resources as well as for designing future studies. Conclusions should take into consideration the limitations discussed above, the real possibilities of the health care situation of Spain, and the need for continuity between primary and specialist care.

Funding

The DIADERM study, which is supported by the Healthy Skin Foundation of the Spanish Academy of Dermatology and Venereology (AEDV), received funding from Novartis. This pharmaceutical laboratory, however, did not participate in gathering or analyzing data, interpreting results, or drafting the final report.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

The DIADERM project was made possible thanks to the collaboration of regional coordinators and local participants.

Appendix A.

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Appendix B. Supplementary data

Supplementary data associated with this article can be found, in Spanish in the online version at [doi:10.1016/j.adengl.2019.02.023](https://doi.org/10.1016/j.adengl.2019.02.023).

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