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Brief Report

Usefulness of an electronic consultation system between primary care health centres and the rheumatology department of a tertiary hospital

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ABSTRACT

Background and objective: Rheumatic diseases account for almost 30% of consultations attended in Spanish primary care centres. The main objective was to analyse the demand for rheumatology consultations from Primary Care and their resolution using the electronic consultation system.

Patients and methods: Retrospective descriptive study of electronic consultations from primary care centres in the health area to the Rheumatology service of a tertiary hospital, between July 2020 and May 2021.

Results: The last 500 consecutive consultations were collected. Mean age of patients was 59.5 years; 74.2% were women. Main reasons for consultation were osteoporosis and treatment of patients with rheumatoid arthritis and spondyloarthritis under follow-up by the department. Mean response time was 2 days. Fifty-seven per cent of patients required outpatient appointments.

Discussion: Over 40% of queries were resolved thanks to the electronic consultation system in an average of 2 days, otherwise patients would have been referred to specialized care.

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Utilidad de la consulta electrónica entre los centros de atención primaria y el Servicio de Reumatología de un hospital terciario

RESUMEN

Introducción y objetivo: Las enfermedades reumáticas representan casi el 30% de las consultas atendidas en los centros de atención primaria españoles. El objetivo principal fue analizar la demanda de consultas reumatológicas desde atención primaria y su resolución mediante el sistema de consulta electrónica.

Pacientes y métodos: Estudio descriptivo retrospectivo de las consultas electrónicas procedentes de los centros de atención primaria del área sanitaria al Servicio de Reumatología de un hospital terciario, entre los meses de julio de 2020 y mayo de 2021.

Resultados: Se recogieron las últimas 500 consultas consecutivas. La media de edad de los pacientes fue 59 años; el 74% eran mujeres. Los principales motivos de consulta fueron la osteoporosis y el tratamiento de pacientes en seguimiento por el servicio por artritis reumatoide y espondiloartritis. El tiempo medio de respuesta fue de dos días; el 57% necesitaron ser citados en consulta externa.

Discusión: La consulta electrónica permitió resolver, en una media de dos días, las consultas del 42,6% de los pacientes.

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Palabras clave:

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Introduction

The 2016 EPISER study was the first Spanish epidemiological study to confirm the great burden which rheumatic diseases entail for the general population: they consume a large quantity

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of resources (medical consultations, pharmaceutical products, etc.) and provoke a high social impact in terms of absenteeism at work. Rheumatic diseases represent almost 30% of consultations in Spanish primary care centres.^{1,2}

Trujillo et al.³ and Tornero-Molina et al.⁴ published studies confirming the reduced healthcare burden with the presence of a rheumatologists in health centres. Telemedicine has been in continuous development since the last decade, allowing for improved access and control of health, especially since the COVID-19 pandemic when it has been much more widely used and socially accepted.⁵ Because of this, in recent years there has been a development of electronic consultation between primary care and the different specialists in hospital care.

E-consultation is of benefit to both patients and doctors at the different levels of care. On the one hand, it improves communication between specialists at different levels, resulting in early diagnosis and recommendations for specific treatment. On the other hand, it avoids unnecessary patient movement within the system and provides an alternative response to increased demand, acting as a triage system, reducing waiting times for those patients who require more urgent care and resolving or providing initial guidelines for those who are not in this situation.^{6–8}

The main objective of this study was to analyse the demand for rheumatology consultations in primary care and their resolution through the e-consultation system.

Patients and methods

A retrospective, descriptive study was designed between July 2020 and May 2021 the simple of which was extracted by consecutive selection of data contained in the “System of requests and information” (SIPE for its initials in Spanish) which supports e-consultation between primary care physicians and the Rheumatology Department of the Puerto de Hierro University Hospital in Majadahonda, considered a tertiary level hospital and which provides healthcare to 10 municipalities in the western metropolitan area of the Community of Madrid (area VI), with a population of 398,937 inhabitants. However, as it is a reference hospital in the northwest area in some specialties, the population assigned to it reaches 516,707 inhabitants.⁹ Electronic consultations began in June 2020 as a result of an initiative of the Regional Ministry for Health of the Community of Madrid to facilitate access to the advice of the hospital specialist in a pandemic situation.

The following variables were collected: age (patients over 16 years of age), sex, reasons for consultation, response time (number of days), and location (follow-up in primary care or hospital). The reasons for consultation were classified into assessment of osteoporosis, monoarthritis, polyarthritis, local-regional pathology and generalised pain; adjustment of treatment, flare, loss of appointment or follow-up, doubts about the COVID-19 vaccine and suspicion of a rheumatologic disease classified according to the International Classification of Diseases (10th revision). Data were processed using Microsoft Excel 2021 (Microsoft, United States).

Personal data were anonymised in the database. This study was approved by the ethics committee of our hospital.

Results

During the time period studied, the last 500 consecutive electronic consultations registered in the system were collected, referring to 496 patients. The mean age was 59.5 ± 17.7 years; 74.2% were women. The reasons for consultation are shown in Table 1. The mean response time was two days, the median response time was one day and the range 0–45; 57.4% (287) of the patients needed

Table 1
Reasons for e-consultation.

Reasons for consultation a	n	%
<i>Osteoporosis assessment</i>	55	11
<i>Administrative procedures</i>	92	18.4
Requesting an appointment	49	9.8
Loss to follow-up	43	8.6
<i>Treatment of patients in follow-up (RA and SpA)</i>	89	17.8
Adjustment	50	10
Adverse effects	11	2.2
Request for infiltration	28	5.6
<i>Assessment of painful syndromes</i>	69	13.8
Local-regional pathology	39	7.8
Generalised pain	7	1.4
Monoarthritis	12	2.4
Polyarthritis	11	2.2
<i>Suspicion of inflammatory disease</i>	82	16.4
Rheumatoid arthritis	19	3.8
Psoriatic arthritis	8	1.6
Spondyloarthritis	11	2.2
Giant cell polymyalgia rheumatica/arthritis	16	3.2
Sjögren's syndrome	5	1
Raynaud's phenomenon	13	2.6
Systemic lupus erythematosus	1	.2
Other systemic autoimmune diseases	9	1.8
<i>Outbreak</i>	18	3.6
<i>COVID-19 vaccine</i>	14	2.8
<i>Others</i>	81	16.2

RA: Rheumatoid Arthritis; SpA: Spondyloarthritis.

to be referred to the rheumatology outpatient clinic, while 42.6% (213) were resolved by the electronic consultation.

Discussion

This study made it possible for the most frequent reasons for consultation to be made known and to develop continuous training programmes focused on the same.

Assessment of osteoporosis was the main reason for consultation, on many occasions due to the fact that the primary care doctor in this health area did not have access to request bone densitometry and because of doubts regarding the initiation and management of treatment. To this end, Naranjo et al.¹⁰ carried out a survey of rheumatologists belonging to the Spanish Society of Rheumatology, who considered that almost half of the patients referred could have been seen in primary care for primary osteoporosis, which is why the management and approach to this disease should be improved to rationalise referrals.

Clarification of doubts and treatment adjustment for patients who were already being monitored by the service was the second reason for consultation; it also made it possible to report adverse effects of treatments more quickly so that they could be replaced or discontinued. This is considered one of the points to be taken into account for the correct development of telemedicine according to EULAR.⁵ This reason was already explained in the work carried out by Trujillo et al.³ Requests for soft tissue or intra-articular infiltration accounted for over 5%, a figure that coincides with that of Tornero-Molina et al.⁴

Requests for missed appointments or missed follow-up in the service accounted for a total of 18% of enquiries. These administrative formalities could be resolved without overloading the system by through face-to-face appointments.

Local-regional pathology assessment was the third most frequent reason for consultation. The electronic medium enabled priority appointments to be made for patients requiring local-regional infiltration due to failure of conservative treatment, as well as for care of outbreaks of patients already known to the system.

Given the time period of the study, in the midst of the COVID-19 pandemic, many doubts arose regarding vaccination in patients

with rheumatologic diseases that were resolved by this method without requiring a specific consultation, either in person or by telephone with the rheumatologist.

Rheumatoid arthritis and polymyalgia rheumatica were the inflammatory diseases most suspected by the primary care physician, as reflected in other studies in which patients were seen in person,^{3,4} and an electronic consultation was carried out for early diagnosis (our study did not determine whether these suspected diagnoses were confirmed). In contrast, systemic lupus erythematosus, was the least suspected, which may be due to the fact that when it is suspected, patients are preferentially referred directly to the emergency department or to outpatient internal medicine consultations.

The first clinical trial conducted to study the reduction of face-to-face referrals to hospital care specialists through the use of e-consultation found that referrals decreased, but could not significantly confirm this decrease due to flaws in the study methodology.¹¹ E-consultation, and telemedicine in general, could also be useful in reducing revisits, as up to 78% would accept a teleconsultation and 61% would prefer it to a face-to-face visit.¹² This could be done by applying triage systems such as the one proposed by Kulcsar et al.,¹³ in which patients with stable diseases and well-established diagnoses or with small flare-ups that can be managed with minimal changes in treatment would be candidates for telemedicine consultation. Those for whom procedures (arthrocentesis or ultrasound) need to be performed or in whom the diagnosis is complex would not be candidates. Applicability would also depend on the type of patient (patients proactive in taking charge of their disease and confident in its management vs. those with little involvement in their disease or who consider telemedicine to be impersonal).¹⁴

In conclusion, our results indicate that the e-consultation makes it possible to resolve more than 40% of the consultations made from primary care, thus avoiding the patient's trip to the hospital and the overload of face-to-face consultations. Waiting time is reduced, with reception of a response in two days on average, allowing faster access to the outpatient circuit in the event that a preferential or urgent assessment is required (due to an outbreak, new diagnosis, change of treatment or need for infiltration), the patient has missed their appointment or follow-up in the service. In view of this study's limitations and for future lines of research, questionnaires should be included to ascertain the opinion of the patient and primary care physicians,¹⁵ to carry out cost-efficient analyses for the diagnosis and management of some pathologies in person vs. electronically, and to check via clinical trials whether e-consultation is capable of reducing the volume of referrals.

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Conflict of interests

The authors have no conflict of interests to declare.

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