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The role of the pharmacist within an immune-mediated inflammatory disease unit: Results of a survey of healthcare providers and patients

Encuesta a profesionales sanitarios y pacientes sobre el papel del farmacéutico en la Unidad de Enfermedades Inflamatorias Inmunomediadas

María Ángeles González-Fernández, Inmaculada Jiménez-Nácher, Elena Villamañán-Bueno, Macarena García-Trevijano, Alicia Herrero

Department of Pharmacy, Hospital Universitario La Paz, Madrid. Spain.

Author of correspondence
María Ángeles González Fernández
Servicio de Farmacia
Hospital Universitario La Paz
Paseo de la Castellana, 261
28046, Madrid. Spain.

Email:
magonzalez.hulp@salud.madrid.org

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Abstract

Objective: To evaluate the importance and need for pharmacists to expand their role to new activities and to promote and maintain others they already carried out prior to the implementation of a new Immune-mediated Inflammatory Diseases Unit to be created in our hospital; to prioritize the new activities incorporated based on the results obtained.

Method: This was a single center cross-sectional based on a survey administered during January 2020 to all clinical healthcare providers due to be part of the new unit, as well as to a sample of patients. It was structured into two categories: actions related to patients' pharmaceutical care, and actions related to practitioners of the Immune-mediated Inflammatory Diseases Unit. Each item was assigned a score from 0 to 10, where 10 indicated maximum interest or need. A prioritization template was applied to quantify and evaluate each activity and implement the new ones in order of priority.

Results: A total of 90 responses were obtained (30 from patients and 60 from healthcare workers). An analysis was performed of the median scores of each of the 20 activities proposed, which ranged between 8 and 10 points. When comparing the scores obtained, it was observed that more statistically significant differences were obtained in the pharmacists vs doctors group than in the pharmacists vs nurses group, or the pharmacists vs patients one. After prioritization, the first action taken was to implement

Resumen

Objetivo: Evaluar el interés y necesidad de que el farmacéutico desarrolle nuevas actividades propuestas, y potenciar o mantener otras que ya se realizaban, antes de que la futura Unidad de Enfermedades Inflamatorias Inmunomediadas inicie su actividad en nuestro hospital. Además, priorizar la incorporación de las nuevas actividades en base a los resultados obtenidos.

Método: Diseño observacional transversal unicéntrico mediante una encuesta realizada en enero de 2020 a todos los profesionales sanitarios de los servicios clínicos implicados y a una muestra de pacientes, y estructurada en dos categorías: Acciones orientadas a la atención farmacéutica al paciente y Acciones orientadas a los profesionales de dicha Unidad. Cada ítem se puntuó de 0 a 10, siendo 10 el máximo interés/necesidad. Se aplicó una matriz de priorización para cuantificar y evaluar cada actividad e implantar las nuevas por orden de priorización.

Resultados: Se completaron 90 encuestas (30 de pacientes y 60 de profesionales). Se analizaron las medianas obtenidas de cada una de las 20 actividades propuestas, alcanzándose valores entre 8 y 10. Se compararon valores: en el grupo de farmacéuticos *versus* médicos se obtuvieron más ítems con diferencias estadísticamente significativas que en el grupo farmacéuticos *versus* enfermería, o farmacéuticos *versus* pacientes.

KEYWORDS
Surveys and questionnaires; Health personnel; Patients; Autoimmune diseases; Patient care team.

PALABRAS CLAVE
Encuestas y cuestionarios; Personal sanitario; Pacientes; Enfermedades inflamatorias inmunomediadas; Equipo multidisciplinar.

electronic prescriptions for outpatients with immune-mediated inflammatory diseases.

Conclusions: The survey revealed the expectations of healthcare providers and patients regarding the role pharmacists should play in the newly created unit and provided an insight into the most valued activities. This information will be useful in prioritizing the implementation of the new activities to be carried out by the unit.

Tras la priorización, la primera acción fue implantar la prescripción electrónica en pacientes externos con enfermedades inflamatorias inmunomediadas.

Conclusiones: La encuesta ha permitido conocer las expectativas de los profesionales sanitarios y pacientes sobre la actividad del farmacéutico en dicha Unidad, cuantificar las actividades más valoradas y priorizar la implantación de nuevas actividades.

Introduction

Immune-mediated inflammatory diseases (IMIDs) are chronic inflammatory diseases caused by an excessive immune response, accompanied or resulting from a dysregulation of inflammation mediation cytokines and by chronic inflammatory damage affecting different organic systems. IMIDs encompass such heterogeneous conditions as rheumatoid arthritis, Crohn's disease and ulcerative colitis, psoriasis, spondyloarthritis, psoriatic arthritis, hidradenitis suppurativa, lupus or uveitis[1].

In Spain, IMIDs affect over 2.5 million people, especially young adults of working age[2]. They usually exerts a strong impact on health-related quality of life, with a loss of function and limitations on the ability to work and perform activities of daily living (ADLs). Moreover, they have a strong economic impact on the health system, particularly as a result of the direct costs involved in recurring use of healthcare resources and the indirect costs associated with losses in labor productivity. There are also a series of genetic alterations and risk factors that justify the co-occurrence of several IMIDs in the same individual as well as the familial aggregation of multiple IMIDs[2]. IMIDs also lead to a higher risk of developing similar comorbidities as a result of the chronic effects of inflammation[3].

A substantial increase has occurred over the last decade in the number of patients diagnosed with one or several IMIDs. Consequently, there has also been an increase in the number of patients treated with biologic drugs aimed at achieving a clinical and radiological control of such diseases. Specifically, the number of patients treated in our hospital for the almost trebled between 2010 and 2019[4-6].

IMIDs encompass widely heterogeneous conditions that fall within the purview of different specialists including rheumatologists, dermatologists, gastroenterologists, internists, ophthalmologists, etc.[7]. Although formerly patients were typically treated individually by each of these specialists, nowadays there is a growing trend for specialists from different specialties to team up with healthcare providers from other domains (pharmacists specializing in IMIDs, nurses, radiologists, psychologists, etc.) to provide patients with more holistic care. This new approach requires the introduction of a new care model capable of ensuring effective and efficient multidisciplinary patient management[8].

The Model for Continuously Enhancing the Integration of Specialist Pharmacists into Care Teams, included in the 2017 Plan of the MAPEX Project, lays down the clinical, pedagogical and research criteria that hospital pharmacists must adhere to in order to meet outpatients' present and future needs[9]. In line with these goals, and taking into consideration the forthcoming implementation of an IMID unit at Madrid's La Paz University Hospital, the Pharmacy Department of our Hospital set about designing a study geared to the different healthcare professionals who would be involved in running the new IMID unit as well as to the pharmacists of the Pharmacy Department, to the management of the Hospital, and to patients with an IMID. The study, which was based on a survey, sought to evaluate the interest shown by respondents in the performance of some activities already carried out by hospital pharmacists and some new activities that they might carry out, prior to the implementation of the new IMID unit in the hospital. It also aimed to establish a prioritization of the new activities on the basis of the results of the survey.

Methods

This was a single-center cross-sectional observational study based on a survey administered to the physicians selected to be part of the IMID unit (rheumatologists, gastroenterologists, dermatologists, pharmacists, nurses and immunologists), to specialist pharmacists from the Hospital's Pharmacy Department, to the Hospital's management, and to a sample of patients with IMID, both from the Children's Hospital and from the General Hospital. The survey, which was conducted before the launch of the unit, was granted approval by the Hospital's Research Ethics Committee.

Respondents were asked to rate 20 different actions to be carried out within the new IMID unit on a scale from 1 to 10, where 10 indicated that the action was absolutely necessary/relevant and 1 indicated that the need/relevance of the action were negligible; a score of 0 was also possible, which indicated indifference. The survey was structured into two sections: Actions related to patients' pharmaceutical care (addressed to practitioners and patients) and Actions related to the practitioners in the IMID unit (addressed only to professionals). The former are included both in Annex 1 and 2 of this paper, whereas the latter are included in Annex 1. Non-patient respondents were classified according to their professional category (medical director, medical specialty, pharmacist, immunologist, nurse). The questionnaires were distributed to the different respondents and collected manually after one month. The patient sample included non naive IMID patients seen at the specialist pharmacist's office during the month allowed for the completion of the survey. These were patients whose pharmacological treatment had been modified and who voluntarily agreed to participate. No distinction was made between different kinds of IMIDs. Patients who had just started their treatment and were therefore not familiar with the standard procedure, involving a diagnosis, prescription, dispensing and clinical and pharmacological follow-up phase were excluded from the study. The survey was administered in January 2020.

The results of the survey were analyzed, and a prioritization template was applied to quantify and evaluate the activities that were considered most necessary/relevant and implement new ones by order of priority. The first column of the template contained the 20 different activities proposed (included in Annexes 1 and 2); the first row included the different assessment criteria used, i.e., the median scores obtained (from 0 to 10); feasibility, which referred to the ease with which the different activities could be implemented; magnitude, defined as the number of patients affected by an activity; benefit, which had to do with the usefulness of the activity to the patients' health; and cost, defined as the economic and/or time-related cost that had to be invested by the Pharmacy Department to implement each activity. The scores for feasibility, magnitude and benefit ranged from 1 y 5 (lowest and highest level, respectively), while scores for cost were awarded on a scale between –1 and –5 (lowest and highest cost, respectively). Four pharmacists rated the four criteria (feasibility, magnitude, benefit, and cost) subjectively for each of the 20 items in the survey. The mean of each of the rated criteria was calculated for each of the 20 items. The final value for each activity was obtained by adding the median values obtained in the survey to the mean of the scores awarded to feasibility, magnitude, benefit, and cost. The prioritization was established by arranging the options in decreasing order according to their scores[10].

Statistical analysis

Descriptive statistics are presented as the median and range of each activity proposed, while the correlation of some of the variables between the different groups of practitioners is presented using the Mann Whitney non-parametric test with the SAS Enterprise Guide 8.2 software package.

As regards the practitioners who participated in the survey, the sample size was not calculated as the survey was administered to all the healthcare providers to be involved in the IMID unit. The sample of surveyed patients included the IMID patients defined above.

Results

A total of 90 samples were completed. Respondents were as follows: 30 patients (33.3%), 22 pharmacists (24.4%), 8 nurses (8.9%), 8 gastroenterologists (8.9%), 8 rheumatologists (8.9%), 5 immunologists (5.6%), 4 dermatologists (4.4%), 4 members of the medical management team (4.4%) and one internist (1.1%).

The questionnaire contained 20 items, of which 12 were Actions related to the practitioners in the IMID unit aimed at healthcare providers (see Annex 1), and eight were Actions related to patients' pharmaceutical care, aimed at both patients and practitioners (Annex 2) (also included in Annex 1).

Table 1 shows the median scores assigned to each item by both healthcare providers and patients.

A comparison of the median scores assigned by the pharmacists vs nurses group does not show any statistically significant differences in the medians obtained for the majority of activities proposed for pharmacists, except for the activity in Question 1 (Providing patients with general information about their treatment) ($p = 0.024$) (Figure 1). This contrasts with the findings for the pharmacists vs physicians group, where statistically significant differences were found in 10 of the 20 activities proposed ($p < 0.05$) (Figure 2). As regards the comparison between pharmacists vs patients, statistically significant differences were only observed for the medians of the activities in Question 5 (Monitoring patient adherence) ($p = 0.012$), and Question 8 Dispensing of 100% of medications by the IMID unit ($p = 0.012$).

The prioritization template contains the mean values for the different criteria analyzed and shows the different scores assigned to each item, presented in order (Table 2). The activities that obtained the highest scores were those aimed at providing information on the drugs administered (conservation/handling, general information to the patient, adverse events), informing physicians of the lack of adherence to the treatment, identifying drug-drug interactions, and starting the issuance of electronic prescription for these patients.

Discussion

Chronic diseases in general, but particularly IMIDs, require the establishment of multidisciplinary teams comprising healthcare providers (physicians, pharmacists, nurses and immunologists) as well as hospital managers and patients to define and implement the strategies required so that practitioners can provide patients with a comprehensive and coordinated standard of care[11]. Hospital pharmacists, responsible for the administration of biologic drugs, are to play a key role in the pharmacotherapeutic follow-up of these patients, particularly when called upon to detect, avoid and resolve medication-related problems and prevent potentially harmful drug-related adverse events[12]. Through the activities proposed in the above-mentioned questionnaire, the present study is indirectly aimed at directing the attention of healthcare providers, medical managers and patients to the activities that pharmacists already carry out, or could carry out, which they may on occasion be unaware of, thus promoting the integration of pharmacists into multidisciplinary care teams.

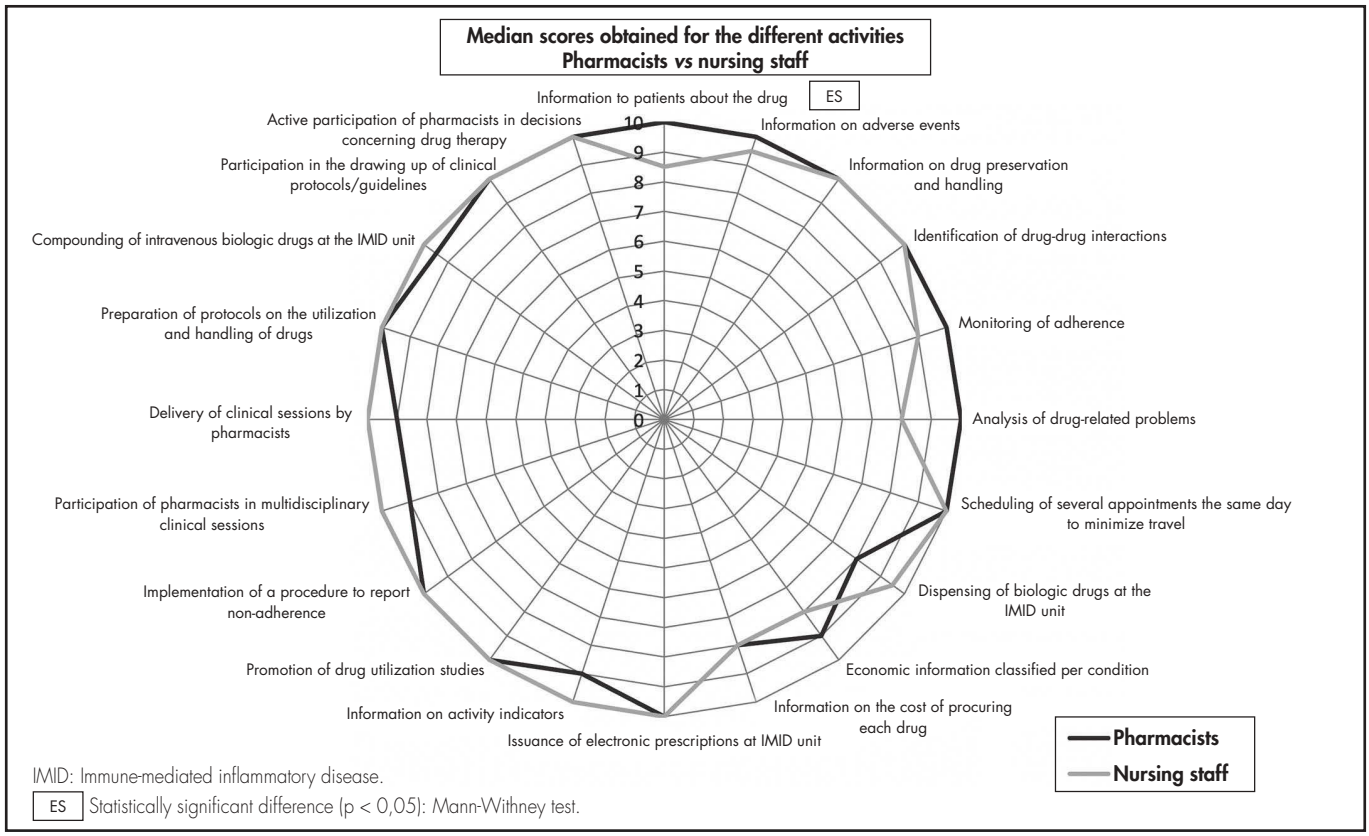
Surveys are used in research as a tool that allows collecting data from a broad sample of the population in a fast and effective way[13]. The literature reviewed included multiple surveys conducted to find out the degree of satisfaction of patients with the pharmaceutical care provided to them at Outpatient Units[14,15]. The survey in Izquierdo-García *et al.* focuses on aspects related to the dispensing of medications and to physical spaces

Table 1. Median values and ranges per group of respondents and per activity

Activities proposed by the survey	Physicians (N = 21)	Management (N = 5)	Nursing staff (N = 8)	Pharmacists (N = 22)	Immunologists (N = 5)	Patients (N = 30)
Information to the patient about the drug	8 (4-10)	10 (5-10)	8.5 (5-10)	10 (8-10)	10 (9-10)	10 (8-10)
Information on adverse events	9 (4-10)	9.5 (7-10)	9.5 (7-10)	10 (8-10)	10 (9-10)	10 (8-10)
Information on drug preservation and handling	10 (4-10)	9.5 (5-10)	10 (9-10)	10 (9-10)	10 (9-10)	10 (7-10)
Identification of drug-drug interaftions	9 (4-10)	9 (5-10)	10 (6-10)	10 (9-10)	10 (9-10)	10 (8-10)
Monitoring of adherence	9 (6-10)	9.5 (5-10)	9 (3-10)	10 (8-10)	10 (10-10)	9 (5-10)
Analysis of drug-related problems	8 (6-10)	8.5 (2-9)	8 (4-10)	10 (6-10)	10 (10-10)	10 (8-10)
Scheduling of appointments the same day to minimize travel	10 (5-10)	9 (8-10)	10 (9-10)	10 (7-10)	10 (9-10)	10 (8-10)
Dispensing of biologic drugs at the IMID unit	9 (7-10)	7 (5-10)	9.5 (5-10)	8.5 (5-10)	10 (8-10)	10 (7-10)
Economic information classified per condition	9 (7-10)	8.5 (7-9)	8 (5-10)	9 (6-10)	9 (7-10)	
Information on the cost of procuring each drug	9 (5-10)	7.5 (3-9)	8 (5-10)	8 (3-10)	9 (7-10)	
Issuance of electronic prescriptions at the IMID unit	10 (7-10)	9 (9-10)	10 (7-10)	10 (7-10)	9 (6-10)	
Information on activity indicators	9 (6-10)	7.5 (6-10)	10 (7-10)	9 (6-10)	9 (6-10)	
Promotion of drug utilization studies	9 (7-10)	8.5 (6-10)	10 (7-10)	10 (6-10)	10 (8-10)	
Implementation of a procedure to report non-adherence	9 (8-10)	9 (8-9)	10 (8-10)	10 (8-10)	9 (9-10)	
Participation of pharmacists in clinical sessions	9 (7-10)	9 (7-10)	10 (8-10)	9 (7-10)	10 (8-10)	
Delivery of clinical sessions by pharmacists	9 (7-10)	8.5 (5-10)	10 (7-10)	9 (6-10)	8 (5-10)	
Preparation of protocols on the utilization and handling of drugs	9 (7-10)	9.5 (7-10)	10 (10-10)	10 (8-10)	9 (7-10)	
Compounding of IV biologic drugs at the IMID unit	8 (4-10)	8 (7-9)	10 (8-10)	10 (8-10)	9 (7-10)	
Participation in the drawing up of clinical protocols/ guidelines	8 (7-10)	8.5 (5-10)	10 (8-10)	10 (8-10)	9 (7-10)	
Participation of pharmacists in decisions concerning drug therapy	8 (5-10)	8.5 (5-10)	10 (8-10)	10 (9-10)	8 (5-10)	

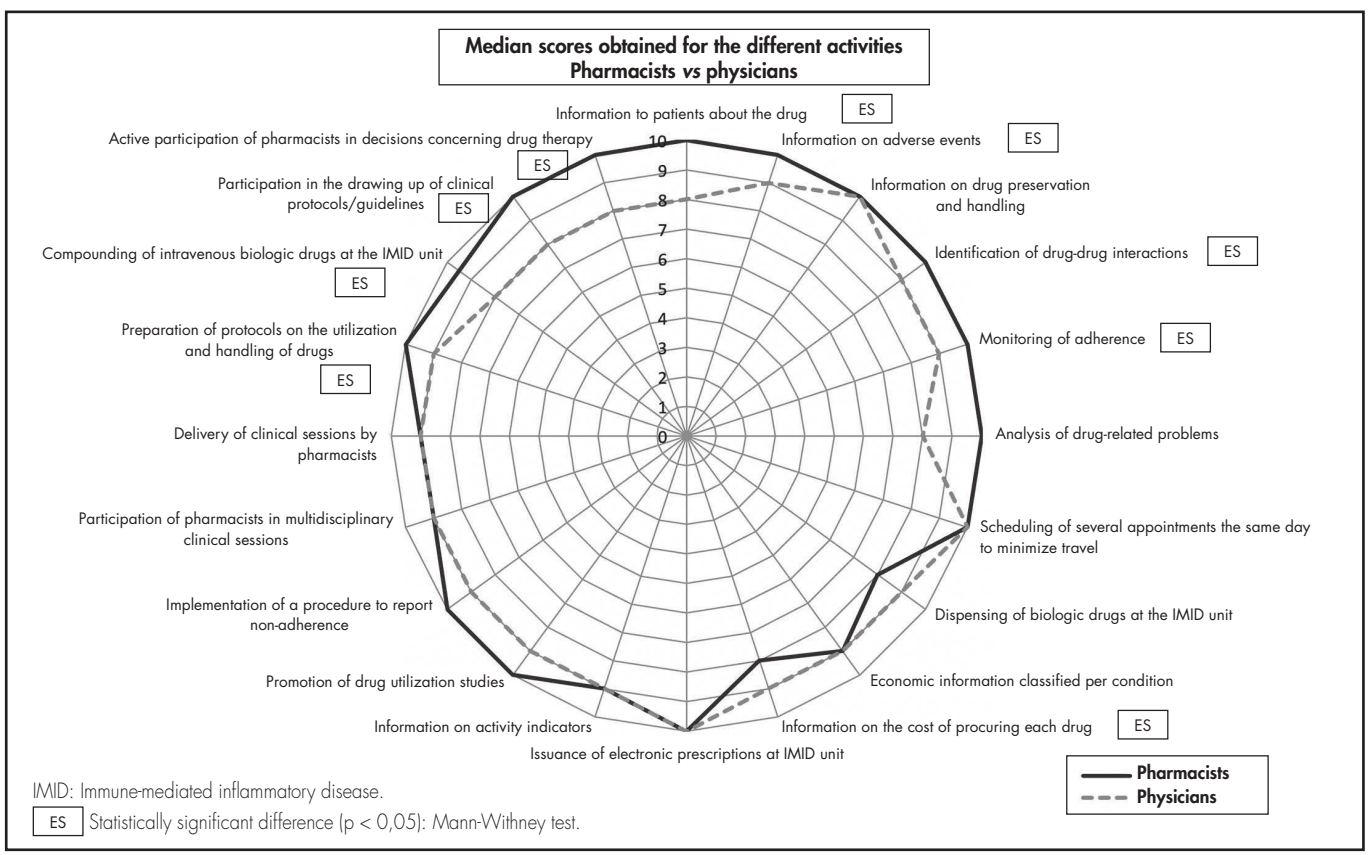
N: Nr of participants; IMID: immune-mediated inflammatory disease; IV: intravenous.

Figure 1. *Comparison of the mean scores obtained in the pharmacists vs nursing staff group and their clinical significance.*



IMID: Immune-mediated inflammatory disease.
ES Statistically significant difference ($p < 0,05$): Mann-Withney test.

Figure 2. *Comparison of the mean scores obtained in the pharmacists vs physicians group and their clinical significance.*



IMID: Immune-mediated inflammatory disease.
ES Statistically significant difference ($p < 0,05$): Mann-Withney test.

Table 2. Prioritization template: scores for each activity, priority order and actions for the future

Activities to be performed by specialist pharmacists at the IMID unit	Median Survey	Magnitude (Mean)	Benefit (Mean)	Feasibility (Mean)	Cost (Mean)	Total Score	Priority order	Actions for the future
Information on drug preservation/handling	10	4.5	5	5	–1.5	**23.0**	***1°***	MAINTAIN & ENCOURAGE
Information to the patient about the drug	10	4	4.5	5	–1	**22.5**	***2°***	MAINTAIN & ENCOURAGE
Information on adverse events	10	4	4.5	5	–1	**22.5**	***2°***	MAINTAIN & ENCOURAGE
Identification of drug-drug interactions	10	3.5	4.5	5	–1	**22.0**	***3°***	MAINTAIN & ENCOURAGE
Implementation of a procedure to report non-adherence	9	4.5	3.5	4	–2	**19.0**	***4°***	**IMPLEMENT**
Analysis of drug-related problems	9	4.5	4.5	2	–2.5	**17.5**	***5°***	MAINTAIN & ENCOURAGE
Monitoring of adherence	10	3.5	4.5	2	–2.5	**17.5**	***5°***	**IMPLEMENT**
Issuance of electronic prescriptions at the IMID unit	10	4.5	2.5	3	–2.5	**17.5**	***5°***	**IMPLEMENT**
Participation in the preparation of clinical protocols/guidelines	9	4.5	3	3	–3	**16.5**	***6°***	ENCOURAGE
Preparation of protocols on the utilization/handling of drugs	10	2	3.5	3.5	–2.5	**16.5**	***6°***	ENCOURAGE
Promotion of drug utilization studies	10	4.5	3	2	–3.5	**16.0**	***7°***	ENCOURAGE
Participation of pharmacists in multidisciplinary clinical sessions	9	4	2	3	–2.5	**15.5**	***8°***	MAINTAIN & ENCOURAGE
Participation of pharmacists in decisions concerning drug therapy	9	4.5	3	3	–4	**15.5**	***8°***	ENCOURAGE
Scheduling appointments the same day to minimize travel	10	5	1	1	–3	**14.0**	***9°***	DECISION UP TO MANAGEMENT
Compounding of IV biologic drugs at the IMID unit	9	4	1.5	1	–3	**12.5**	***10°***	DECISION UP TO MANAGEMENT
Dispensing of biologic drugs at the IMID unit	10	4.5	1	1.5	–4.5	**12.5**	***10°***	DECISION UP TO MANAGEMENT
Economic information classified per condition	9	1.5	1	4.5	–4	**12.0**	***11°***	MAINTAIN & ENCOURAGE
Delivery of clinical sessions by pharmacists	9	1.5	1	4	–3.5	**12.0**	***11°***	ENCOURAGE
Information on the cost of procuring each drug	8	3	1	3.5	–4.5	**11.0**	***12°***	ENCOURAGE
Information on activity indicators	9	1	1	2.5	–2.5	**11.0**	***12°***	MAINTAIN & ENCOURAGE

Each item was scored on a scale between 1 and 5. Where 1 meant "not so much" and 5 meant "very much indeed."With the exception of the cost item where 1 was the lowest cost and 5 was the highest cost.
Magnitude: number of patients affected by each activity.
Benefit: health benefit for the patient if the activity were implemented.
Feasibility: ease with which the activity could be implemented.
Cost: time-related and/or economic cost of implementing each activity: (-1) (lowest cost; (-5) (highest cost).
Score: Median + Magnitude + Benefit + Feasibility + Cost.
IMID: Immune-mediated inflammatory disease.

and organization (timetables, waiting times, amount of drug dispensed, etc.)[14]. Monje-Agudo *et al.* direct their survey to aspects related to the drug-related information provided to patients during their interview with the pharmacist. As many as 67-76% of surveyed patients stated that the information received gave them a sound understanding of the drugs prescribed to them, potential drug-drug interactions, the importance of adherence and of how to manage adverse events[15]. The survey in the present study also includes a few items on activities related to these four aspects.

Administration of surveys to healthcare providers is less frequent[16-18]. When performed, these surveys tend to analyze the activities carried out by hospital pharmacists within the Pharmacy Department to determine the (internal or external) client's satisfaction. They usually cover aspects similar to those in the survey presented in this study, including the use of electronic prescriptions in hospitalized patients[16], the availability of pharmacists to answer technical questions and their capability to clarify doubts, among others[17,18], or the information provided by pharmacists[18].

Nonetheless, the Pharmacy Department, as a central service, does not serve the hospital's patients in isolation but rather in collaboration with other healthcare providers (physicians and nurses) from different clinical areas. At the same time, hospital pharmacists provide valuable guidance to the hospital's management[19]. In this respect, the data used in the present study was obtained from a survey directed to different groups of

individuals (patients, healthcare providers and management) who shared their expectations about the tasks that pharmacists would have to perform in an about-to-be-launched multidisciplinary IMID unit. The aim was to ensure that the work of pharmacists in that unit would be as efficient and effective as possible. Furthermore, the activities proposed were quantified and prioritized using a prioritization template[10], a tool that allows selection of different options and/or the establishment of priority activities by weighting and applying different criteria and organizing the different options in decreasing order on the basis of the scores obtained. This should facilitate the decision-making process involved in implementing the different actions[10,20].

Subjects were asked to rate the different actions on a 0-10 scale rather than a Likert-type scale, which is the kind of scale used in other published articles dealing with outpatient pharmaceutical care[14,21]. Although the Likert scale offers a ranking of the respondents' views and is very simple to use, positive responses tend to outweigh negative ones as subjects tend to answer I agree which is the option requiring the least mental effort. That is the reason why the survey in this study included a numerical scale[22].

The most appreciated activities, which obtained median scores of 9-10, were those related with informing the patient about the drugs prescribed across different dimensions (overall information about the drugs, drug-drug interactions, drug handling and conservation, and adverse events). The second group of activities, with lower yet considerable median scores (8-8.5) included those dealing with the analysis of drug-related problems, information on the cost of drugs or the preparation of IV biologics in the IMID unit by the pharmacist, among others. Strikingly, while physicians and pharmacists attached great importance to therapeutic adherence, patients did not. Participation of pharmacists in pharmacotherapeutic decisions regarding the patient and Participation of pharmacists in the preparation of clinical protocols/guidelines were the items awarded the lowest scores (in many of the groups median values remained below the 8-8.5 mark).

After quantifying and prioritizing the different activities proposed, a decision was made to maintain some of them just as they had been performed and to promote others that were only carried out sporadically. Although the initial idea was to implement the new activities following the order obtained from the survey (Table 2), as a result of the limitations of the COVID-19 pandemic, it was decided that the first activity to be launched would be implementation of electronic prescriptions (EPs) in outpatients with IMID, which would allow a reduction of direct verbal and paper-based written communication and make it possible for physicians to work away from their office[23,24]. In this respect, the COVID-19 pandemic became an opportunity to improve the new activity that was incorporated the Outpatient care and dispensation section of the Pharmacy Department of our Hospital. Consequently, in the course of 2020 EPs were gradually incorporated into the Hospital's Gastroenterology, Internal Medicine and Rheumatology Departments for patients with inflammatory bowel disease, lupus, scleroderma, vasculitis, rheumatoid arthritis, spondyloarthritis, and psoriatic arthritis. Other IMIDs such as atopic dermatitis, psoriasis and hidradenitis, as well as procedures like adherence control and information to the physician about patients' lack of adherence will be implemented in 2021, following the results of applying the prioritization template.

The main contribution of this study is that the survey, unlike those included in similar studies in the literature, was directed to healthcare providers, hospital management and patients. Acquaintance with multiple perspectives enriched and expanded the knowledge required to achieve the research goal of this analysis. Moreover, dissemination of this experience may help other Pharmacy Department in other hospitals to develop their own IMID units.

One of the limitations of this study, performed in a third-level hospital, has to do with the presence of multiple items and with the study's cross-sectional design. When analyzing each question, it is difficult to obtain an overall view of the results, which makes it difficult to establish correlations across them[25]. In addition, the questionnaire was not formally validated, with the small number of healthcare providers included leading to a higher risk of increasing the variability of results and hampering their external validity.

Another limitation of the study is the presence of several potential biases (errors that modify the information, making it less realistic) inherent in the tool used to make the observations, and in the methodology used for their application[26]. Our study could be accused of a certain politeness bias, characteristic of studies including surveys to patients, whereby the patient seeks to please the interviewer by providing what they think is an appropriate answer[27], withholding their own opinions. Likewise, there could be biases derived from problems with the way questions are worded, and biases in the answers provided by healthcare providers or patients to questions they found uncomfortable or compromising[26].

In a nutshell, understanding the expectations of healthcare providers (physicians, pharmacists and nurses), managers and patients about certain activities to be carried out by hospital pharmacists selected to be part of the new IMID unit was helpful in prioritizing the implementation of new activities**,** maintaining and/or prioritizing others and identifying weaknesses, the need to make certain changes and, ultimately, identify improvement opportunities.

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Conflict of interest

No conflict of interest.

This research project received the third prize in the first edition of the FARMAIMPULSO competition, organized by SEFH's GTEII Working Group (2020).

Contribution to the scientific literature

A survey was administered to evaluate and prioritize pharmacist activities in a multidisciplinary unit.

The results could be used by other Hospital Pharmacy Departments.

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ANNEX 1

SURVEY TO HEALTHCARE PROVIDERS: *WHAT ARE YOUR EXPECTATIONS FROM THE PHARMACY DEPARTMENT AND THE IMPLEMENTATION OF THE ACTIVITIES LISTED BELOW BY THE IMID UNIT PHARMACIST?*

In view of the forthcoming implementation of an IMID Unit in our hospital, the Pharmacy Department would like to have the opinion of the healthcare providers who will be assigned to that unit about a number of issues. Specifically, we would like to gauge their views on **what they expect from the Pharmacy Department, about what activities pharmacists should perform, and about the implementation of the different activities.** It would be extremely helpful to have your views on the subject so as to prioritize the implementation of the new activities envisaged.

PLEASE TICK THE BOX THAT CORRESPONDS TO YOUR AREA/DEPARTMENT:

MANAGEMENT ..... ☐

GASTROENTEROLOGY UNIT ..... ☐

RHEUMATOLOGY UNIT ..... ☐

DERMATOLOGY UNIT ..... ☐

INTERNAL MEDICINE UNIT ..... ☐

IMMUNOLOGY UNIT ..... ☐

NURSING ..... ☐

PHARMACY DEPARTMENT ..... ☐

PLEASE ASSIGN A SCORE BETWEEN 0 AND 10 TO THE ACTIVITIES BELOW

0 = INDIFFERENT:

1 2 3 4 5 6 7 8 9 10

- → +

Not so important/necessary **Highly important/necessary**

ANNEX 1 ***(cont.)***

A) (Activities related to the pharmaceutical care provided to patients)

1.º Providing patients with general information about their treatment: purpose of the treatment (dosing, regimen and route of administration) and consolidate all the information in written form by means of information brochures.

1) Assign a score between 0 and 10: ……..

2.º Providing patients with information about the potential adverse events of the medication and, if appropriate, on how to prevent them or how to minimize or resolve them if they occurred.

2) Assign a score between 0 and 10: ……..

3.º Providing patients with information on how to preserve and handle medications, and about proper waste management.

3) Assign a score between 0 and 10: ……..

4.º Providing patients (and physicians) information on potential interactions with concomitant drugs or with foods, medicinal plants, etc.

4) Assign a score between 0 and 10: ……..

5.º Monitoring patients' adherence to treatment by means of an analysis of adherence and/or positive reinforcement actions to maintain it or, if necessary, to improve it.

5) Assign a score between 0 and 10: ……..

6.º Compiling an exhaustive record of the patient's medical history to anticipate potential drug-related problems, concerns or fears in order to prevent them or, if they do occur, minimize them or resolve them as far as possible.

6) Assign a score between 0 and 10: ……..

7.º Scheduling the different appointments of a patient in one single day (insofar as possible) so as to minimize travel.

7) Assign a score between 0 and 10: ……..

8.º Dispensing of 100% of the medication required by outpatients by the IMID Unit.

8) Assign a score between 0 and 10: ……..

ANNEX 1 ***(cont.)***

B) (Activities related to practitioners in the IMID Unit)

9.º Providing regular economic information about the pharmacological treatments dispensed, classified by condition, drug and department.

9) Assign a score between 0 and 10: ……..

10.º Providing regular economic information about the procurement of biologic drugs. (negotiations, offers received, discounts).

10) Assign a score between 0 and 10: ……..

11.º Starting the issuance of electronic prescriptions to outpatients and ambulatory patients using the HCIS electronic clinical record system.

11) Assign a score between 0 and 10: ……..

12.º Providing information through activity indicators (e.g., number of patients treated, number of drugs dispensed, and others).

12) Assign a score between 0 and 10: ……..

13.º Promoting the performance of studies to evaluate the use of drugs in the clinical practice of the different clinical departments of our hospital; publication and dissemination thereof.

13) Assign a score between 0 and 10: ……..

14.º Establishing an agile and practical system to report non-adherence.

14) Assign a score between 0 and 10: ……..

15.º Participating in multidisciplinary clinical sessions.

15) Assign a score between 0 and 10: ……..

16.º Organizing clinical sessions that may be of interest to other practitioners.

16) Assign a score between 0 and 10: ……..

17.º Drawing up protocols on the correct handling of drugs, premedication and the administration of drugs in the day hospital setting.

17) Assign a score between 0 and 10: ……..

18.º Ensuring that all intravenous treatments are prepared by the pharmacy department.

18) Assign a score between 0 and 10: ……..

19.º Participating in the preparation of clinical protocols/guidelines.

19) Assign a score between 0 and 10: ……..

20.º Actively participating in decisions concerning drug therapy.

20) Assign a score between 0 and 10: ……..

Suggestions (free text):

ANNEX 2

SURVEY TO PATIENTS: *WHAT ARE YOUR EXPECTATIONS FROM THE PHARMACY DEPARTMENT AND THE IMPLEMENTATION OF THE ACTIVITIES LISTED BELOW BY THE IMID UNIT PHARMACIST?*

In view of the forthcoming implementation of an IMID Unit in our hospital, the Pharmacy Department would like to have the opinion of the patients who might require to be admitted to that unit. That is the reason behind the administration of this survey, which is intended to gauge the patients' views about **what they expect from the Pharmacy Department, about what activities pharmacists should perform, and about the implementation of the different activities.** It would be extremely helpful to have your views on the subject so as to prioritize the implementation of the new activities envisaged.

PLEASE ASSIGN A SCORE FROM 0 TO 10 TO EACH OF THE ACTIVITIES BELOW

0 = INDIFFERENT

1 2 3 4 5 6 7 8 9 10

- → **+**

Not so important/necessary **Highly important/neccesary**

(Activities related to the pharmaceutical care provided to patients)

1.º Providing patients with general information about their treatment: purpose of the treatment (dosing, regimen and route of administration) and consolidate all the information in written form by means of information brochures.

1) Assign a score between 0 and 10: ……..

2.º Providing patients with information about the potential adverse events of the medication and, if appropriate, on how to prevent them or how to minimize or resolve them if they occurred.

2) Assign a score between 0 and 10: ……..

3.º Providing patients with information on how to preserve and handle medications, and about proper waste management.

3) Assign a score between 0 and 10: ……..

ANNEX 2 ***(cont.)***

4.º Providing patients (and physicians) information on potential interactions with concomitant drugs or with foods, medicinal plants, etc.

4) Assign a score between 0 and 10: ……..

5.º Monitoring patients' adherence to treatment by means of an analysis of adherence and/or positive reinforcement actions to maintain it or, if necessary, to improve it.

5) Assign a score between 0 and 10: ……..

6.º Compiling an exhaustive record of the patient's medical history to anticipate potential drug-related problems, concerns or fears in order to prevent them or, if they do occur, minimize them or resolve them as far as possible.

6) Assign a score between 0 and 10: ……..

7.º Scheduling the different appointments of a patient in one single day (insofar as possible) so as to minimize travel.

7) Assign a score between 0 and 10: ……..

8.º Dispensing of 100% of the medication required by outpatients by the IMID Unit.

8) Assign a score between 0 and 10: ……..

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