

Scientific papers published in “EMERGENCIAS” from 2000 to 2004: participation of emergency department physicians and comparison with their contribution in indexed journals

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Aims: To assess the predominant characteristics of scientific papers published by Spanish clinicians from emergency departments physicians, from 2000 to 2004, in journals indexed in the Science Citation Index (SCI) database and in the journal EMERGENCIAS, which is not included in the aforementioned index.

Material and method: All the articles published in the journal EMERGENCIAS during the period 2000-2004 were reviewed. A scientific paper was considered a Spanish emergency department physician document if the setting was Spain and if it included any of the following expressions related to an emergency service: *urgències, urgències, urxències, larrialdia, larrialdia, emergentziak, emergencias, emergències, emerxencias, emergency, 061, SAMU, 1006, SUC, SEM, SEMSA, SERCAM, 112, DEIAK or EPES*. The same strategy was used to search for journals in the SCI during the same period. All data and bibliometric indicators used in previous studies by our group were registered and analyzed. A slightly modified index of the text “Tratado de Medicina de Urgencias” by Tintinalli was used to determine the lines of investigation.

Results: Throughout the whole study period, the Spanish emergency department clinicians published 594 scientific papers; among which 290 appeared in EMERGENCIAS and 304 were indexed in SCI. 51% were written by clinicians from 26 hospitalary emergency departments and 3 emergency systems, in addition to the SEMES. Significant differences were observed in the contribution of each community are centre to the scientific production, the bibliometric characteristics and the topics reported between EMERGENCIAS and the SCI. Madrid prevailed in EMERGENCIAS, Catalonia and Andalusia in the SCI and Galicia and the Basque Country had a balanced scientific production. EMERGENCIAS had a lower number of original studies, signed by fewer authors, *emergency department physicians* more frequently signed in first place, and frequency of physicians from extrahospitalary emergency departments and independent emergency services was hister.

Conclusions: The volume of studies by emergency department physicians publishing in EMERGENCIAS is similar to that of studies published in journals indexed in the SCI albeit with differences in the bibliometric characteristics and subjects. [Emergencias 2008;20:308-315]

Key words: Emergency medicine. Research. Bibliometrics.

Introduction

A year ago the impact of scientific production of emergency physicians in journals indexed by the Science Citation Index (SCI) over a 30-year period (1975-2004) was published in the journal

EMERGENCIAS^{1,2}. From the analysis of this activity it was concluded that emergency physicians have a relatively low scientific production with scarce quality, although an important increase was observed in the volume of documents published during the last 10 years¹. Likewise, compared with the

production of our emergency physician colleagues in other countries and that of other medical specialties in Spain, our scientific production was also quantitatively low. However, our rhythm of growth during the last 10 years showed a greater relative increase in comparison with the previously cited groups².

As we have recognised in these articles, it is clear that part of the investigative activity of the physicians who work in the Spanish emergency care services and emergency departments has been masked by the fact that the Spanish scientific journal covering this field, EMERGENCIAS, is not indexed in the international databases and, especially, in the SCI. With the aim of overcoming this bias and completing the balance of the investigative activity carried out by Spanish emergency medicine physicians, an analysis of the same has been undertaken by manual review of the publications in EMERGENCIAS during the 5-year period from 2000-2004 and this has been compared with the activity reported in the SCI during the same period of the previously published study^{1,2}.

Methods

All the documents published in EMERGENCIAS from 2000-2004 were manually and individually reviewed. A document was considered to have been produced by a Spanish emergency physician if the affiliation of the author included, in addition to its eradication in Spain, any of the following expressions which identify a service/vehicle of emergency care in our country: *urgencias*, *urgencies*, *urxencias*, *larrialdia*, *larrialdia*, *emergentziak*, *emergencias*, *emergencies*, *emexencias*, *emergency*, 061, SAMU, SUMMA, 1006, SUC, SEM, SEMSA, SERCAM, 112, DEIAK or EPES. This was the same strategy used for the search in SCI journals during the same 2000-2004 period and has been previously described in greater depth¹.

Of these documents, the following data were recorded: year of publication, type of document (original, clinical note, letter to the Editor, editorial, review), centre, province and autonomous community of the first emergency physician who signed and the order of the signature (first or secondary author), if the emergency physician was affiliated with a university, his/her main activity (hospital, extrahospital, primary care, public organisms/enterprises, scientific societies), whether the work involved collaboration with other hospital departments and/or with another hospital (and if this hospital was from the same autonomous com-

munity, from another community or another country), or if the study was in collaboration with other emergency departments/services. If emergency physicians with different affiliations were included in the same document, the article was assigned to the centre of the first emergency physician author. To determine the lines of investigation of the Spanish emergency physicians, the index of one of the main textbooks in emergency care and emergency medicine, the slightly modified "Tintinalli's Textbook of Emergency Medicine"³ was used and the document was classified in the most appropriate category for its subject, as per the judgement of the reviewer.

Means and standard deviations were used in the statistical analysis to present quantitative variables and the percentage for the qualitative variables, while the Student's t or the Chi-square tests, respectively, were used for comparisons between groups. In the latter case, if the effectives calculated in some of the boxes were less than 5, the Fishers exact test was used. Some of the bibliometric data were corrected according to the population (number of inhabitants, data from 2006) or the economic development (gross national product, GNP, 2003) of the autonomous community (AC). Differences were considered to be statistically significant with a $p < 0.05$.

Results

During the 5-year study period from 2000-2004, a total of 358 documents were published in EMERGENCIAS. Of these, the affiliation of at least one of the authors of 290 documents (81%) corresponded to emergency care or emergency medicine while no emergency physician had signed in the remaining 68 (19%). During this same period of 2000-2004, emergency physicians published 304 documents indexed by the SCI. The annual distribution of documents is shown in Figure 1.

The description of the contribution made by each AC with respect to the absolute number of articles and based on the population and economic development is depicted in Figure 2. Likewise, the individual centres which contributed to this production are presented in Table 1. Taking the preparation of a mean of one document per year studied as significant production, 51% of the 594 documents studied were carried out by authors belonging to 26 hospital emergency departments and 3 emergency systems in addition to SEMES. It can be seen that according to how the documents published in EMERGENCIAS or those published in

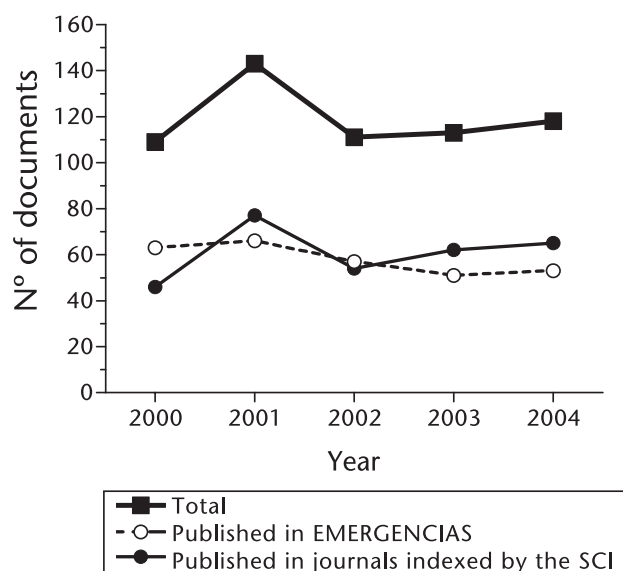


Figure 1. Number of documents published annually by emergency physicians. SCI: Science Citation Index.

the journals indexed by the SCI are considered, there is a very important difference in regard to the contribution made by each community and each centre to the overall scientific production of emergency physicians. Thus, if the five AC with the greatest scientific production in these years are considered, some presented a balanced production in both types of journals (as in the case of Galicia or the Basque Country), others mainly published in the journal EMERGENCIAS (as in the Community of Madrid) and others mainly published in journals indexed by the SCI (such as Catalonia and Andalusia). With respect to the centres, it is of note that none of the centres which are leaders in the publications in EMERGENCIAS (Clínica Puerta de Hierro in Madrid) and the journals indexed by the SCI (Hospital Clínic of Barcelona) are important producers of articles in the other group of journals. Indeed, only two centres, the Hospital de Poniente in Almería and the Hospital Mútua de Terrassa demonstrated a significant scientific contribution (5 or more documents) to the two groups of journals studied.

Comparison of some of the bibliometric characteristics of the articles of the emergency physicians published in EMERGENCIAS and in the journals indexed by the SCI is presented in Table 2, with statistically significant differences also being observed. The scientific production of the emergency physicians published in EMERGENCIAS compared with what was published in journals indexed by the SCI was signed by fewer authors, the type of document was clearly different, with a lower number of

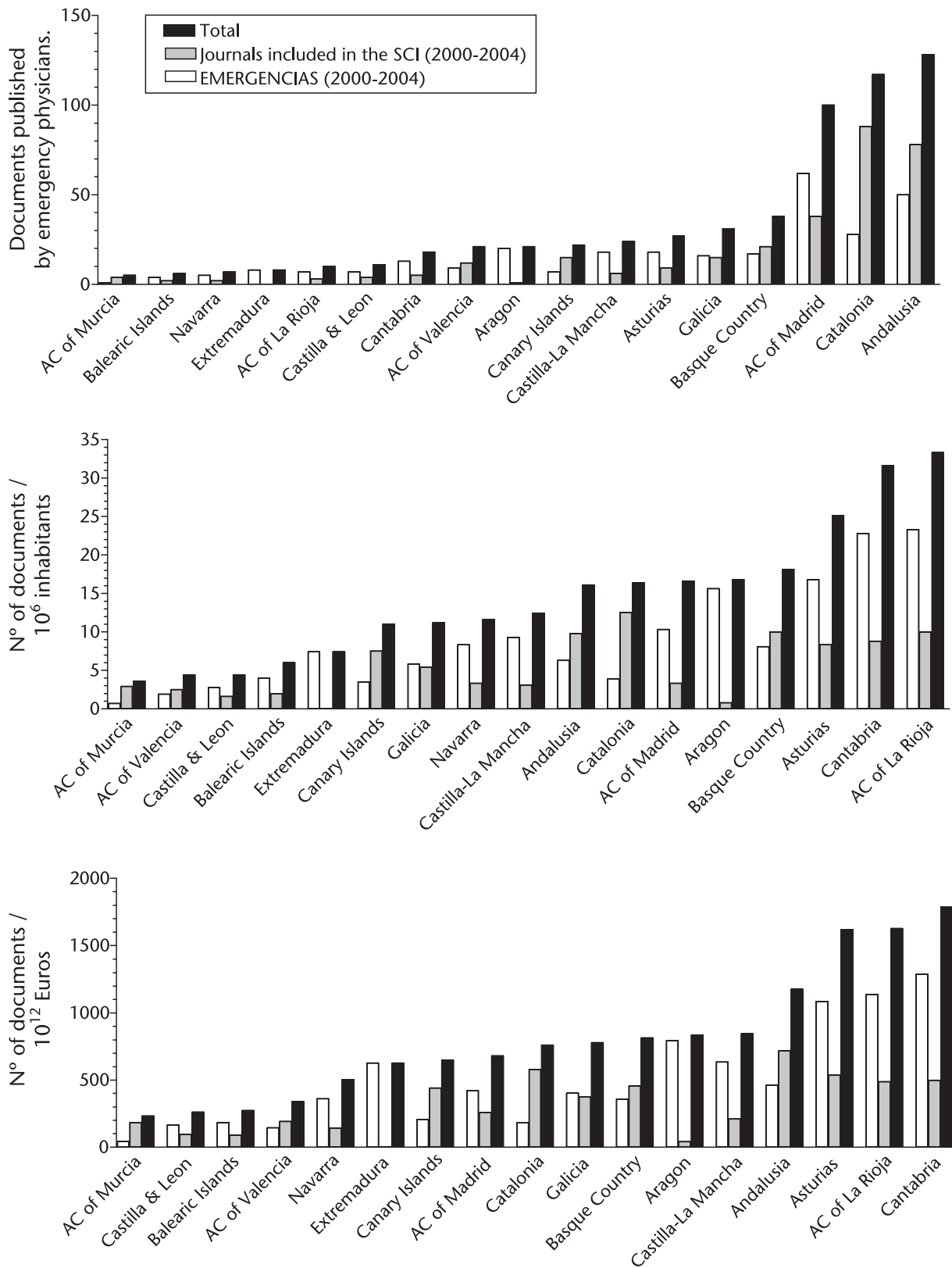
Table 1. Relationship of the centres which published at least 5 documents in some of the categories signed by emergency physicians during the period from 2000-2004

	Number of documents	% compared to total
Published in EMERGENCIAS	290	100
Clínica Puerta de Hierro, Madrid	28	13.0
Hospital de Guipúzcoa	8	3.7
Hospital Miguel Server, Zaragoza	8	3.7
Hospital Virgen de la Luz, Cuenca	7	3.2
Hospital Obispo Polanco, Teruel	7	3.2
Hospital de Poniente, Almería	7	3.2
Hospital Marqués de Valdecilla, Santander	7	3.2
Sociedad Española de Medicina de Urgencias y Emergencias (SEMES)	6	2.8
061-Madrid	6	2.8
Hospital Universitario Reina Sofía, Córdoba	6	2.8
Hospital del Mar, Barcelona	6	2.8
Hospital Mútua de Terrassa	5	2.3
Hospital Universitario de San Agustín, Asturias	5	2.3
SEM de Asturias	5	2.3
Hospital General de Albacete	5	2.3
Hospital San Millán y San Pedro, Logroño	5	2.3
Remaining hospital with less than 5 documents	169	58.3
Published in journals indexed by the SCI	304	100
Hospital Clínic, Barcelona	33	10.9
Hospital Universitario Virgen del Rocío, Sevilla	18	6.3
Hospital de Poniente, Almería	15	4.9
Hospital Universitario Virgen de las Nieves, Granada	14	4.6
Hospital Universitario de Santiago de Compostela	12	3.9
Hospital Sant Pau, Barcelona	10	3.3
Hospital Universitario Ramón y Cajal, Madrid	10	3.3
Hospital Universitario de Canarias, Tenerife	9	3.0
Hospital Germans Trias i Pujol, Badalona	9	3.0
Hospital de Basurto, Bilbao	6	2.0
Hospital Clínic Universitario San Carlos, Madrid	6	2.0
Hospital Juan Ramón Jiménez, Huelva	6	2.0
Hospital Mútua de Terrassa	6	2.0
Fundación Jiménez Díaz, Madrid	5	1.6
Hospital Carlos Haya, Málaga	5	1.6
SEM-061 de Barcelona	5	1.6
Remaining hospitals with less than 5 documents	122	40.1

SEM: System of Emergency Medicine. SCI: Science Citation Index.

originals and a higher number of reviews and clinical notes, the emergency physician was more often the first author, there was lower representation of hospitals and a greater representation of extrahospital emergency physicians, the emergency physician more often belonged to an independent emergency service but was less frequently linked to a university and lastly, there were fewer collaborations with other specialists from the same and international centres. On the other hand, however, there was a higher percentage of collaborations between different centres or emergency care services.

Finally, the fields in which the scientific studies of the emergency physicians were involved are shown in Table 3. Again, there were differences in the distribution of the subjects according to



Autonomous Community

Figure 2. Contribution of documents from each autonomous community (AC) considered as absolute values (upper graph) and according to its population (centre) and its economic development measured as gross national product (GNP, lower graph). SCI: Science Citation Index.

Table 2. Comparison of the main bibliometric characteristics of the documents produced by Spanish emergency physicians

	Total (n = 594)	EMERGENCIAS (n = 290)	SCI (n = 304)	p value
Number of authors [mean (SD)]	4.6 (2.5)	4.0 (2.0)	5.2 (2.6)	< 0.001
Type of document [number (%)]				< 0.001
Article	257 (43.3)	72 (24.8)	185 (60.9)	
Letter	152 (25.6)	70 (24.1)	82 (27.0)	
Review	66 (11.1)	56 (19.3)	10 (3.3)	
Note	60 (10.1)	60 (20.7)	0 (0.0)	
Editorial	59 (9.9)	32 (11.0)	27 (8.9)	
Order of the emergency physician authorship				< 0.001
First author	439 (73.9)	248 (85.5)	191 (62.8)	
Second author	155 (26.1)	42 (14.4)	113 (37.2)	
Activity of emergency physician [number (%)]				< 0.001
Hospital	518 (87.2)	233 (80.3)	285 (93.8)	
Extrahospital emergencies	50 (8.4)	37 (12.8)	13 (4.3)	
Administration	14 (2.4)	14 (4.8)	0 (0.0)	
Scientific society	8 (1.3)	6 (2.1)	2 (0.7)	
Primary care emergency centres	4 (0.7)	0 (0.0)	4 (1.3)	
Definition of emergency centre [number (%)]				< 0.001
Independent	460 (77.6)	256 (88.6)	204 (67.1)	
Dependent on intensive care	80 (13.5)	18 (6.2)	62 (20.4)	
Dependent on internal medicine	20 (3.4)	10 (3.5)	10 (3.3)	
Dependent on paediatrics	17 (2.9)	3 (1.0)	14 (4.6)	
Dependent on traumatology	7 (1.2)	2 (0.7)	5 (1.6)	
Dependent on surgery	6 (1.0)	0 (0.0)	6 (2.0)	
Dependent on others	3 (0.5)	0 (0.0)	3 (1.0)	
University affiliation of emergency physician [number (%)]				< 0.001
no	513 (86.5)	269 (92.8)	244 (80.5)	
yes	80 (13.5)	21 (7.2)	59 (19.5)	
Collaboration with other departments in the same hospital [number (%)]				< 0.001
no	248 (41.8)	151 (52.1)	97 (32.0)	
yes	345 (58.2)	139 (47.9)	206 (68.0)	
Collaboration with other Spanish centres in the same autonomous community [number (%)]				0.89
no	435 (73.4)	212 (71.1)	223 (73.6)	
yes	158 (26.6)	78 (26.9)	80 (26.4)	
Collaboration with other Spanish centres from another autonomous community [number (%)]				0.46
no	539 (90.9)	261 (90.0)	278 (91.7)	
yes	54 (9.1)	29 (10.0)	25 (8.3)	
Collaboration with centres from another country [number (%)]				< 0.001
no	572 (96.5)	289 (99.7)	283 (93.4)	
yes	21 (3.5)	1 (0.3)	20 (6.6)	
Collaboration with other emergency departments/services [number (%)]				< 0.01
no	522 (88.5)	246 (84.8)	276 (92.0)	
yes	68 (11.5)	44 (15.2)	24 (8.0)	

whether the article was published in EMERGENCIAS or in SCI journals. Thus, the articles describing prehospital care and catastrophes, special situations and the management of injuries were more frequently reported in the first while articles dedicated to infectious diseases, the organisation of emergency care and paediatric emergency medicine were published in the second.

Discussion

For the first time, one year ago we published the scientific production carried out by a collective

of Spanish physicians who had their healthcare activity in departments or services of emergency medical care in common¹. This analysis was limited to the "visible" literature and more specifically, using the databases currently considered as the "gold pattern" of bibliometrics: the SCI. At present, the journal, EMERGENCIAS is not included in this database⁴ and thus, the present study which analyses a recent period (2000-2004) including the journal EMERGENCIAS covers most of the journals in which Spanish emergencilogists publish and, therefore, describes quite a reliable scenario of the current situation of investigation in our speciality.

Table 3. Areas of investigation in which the documents published by emergency physicians were published

Classification according to the index <i>Tintinalli's Textbook of Emergency Medicine</i> * [n (%)]	Total (n = 594)	EMERGENCIAS (n = 290)	SCI (n = 304)	p value*
Cardiovascular disease	91 (15.4)	49 (17.0)	42 (14.0)	0.35
Infectious diseases	65 (11.0)	25 (8.7)	40 (13.3)	0.10
Toxicology and pharmacology	63 (10.7)	26 (9.0)	37 (12.3)	0.26
Pulmonary emergencies	42 (7.1)	19 (6.6)	23 (7.7)	0.63
Gastrointestinal emergencies	42 (7.1)	24 (8.3)	18 (6.0)	0.34
Special situations	41 (7.0)	35 (12.1)	6 (2.0)	< 0.001
Organisation of emergency department	38 (6.5)	4 (1.4)	34 (11.3)	< 0.001
Urgent prehospital care and catastrophes	35 (5.9)	21 (7.2)	14 (4.6)	0.22
Neurology	33 (5.6)	12 (4.2)	21 (7.0)	0.14
Cardiopulmonary reanimation and techniques	22 (3.7)	11 (3.8)	11 (4.3)	1.00
Traumatology and diseases of the bone, joints and tendons	15 (2.5)	9 (3.1)	6 (2.0)	0.44
Cardiocirculatory shock	14 (2.4)	9 (3.1)	5 (1.7)	0.29
Wound management in the emergency department	13 (2.2)	10 (3.5)	3 (1.0)	0.05
Concepts of image	13 (2.2)	8 (2.8)	5 (1.7)	0.41
Paediatrics	11 (1.9)	1 (0.3)	10 (3.3)	< 0.05
Remaining categories with less than total of 10 documents	56 (9.4)	27 (9.3)	29 (9.5)	1.00

*p value calculated using a 2 x 2 table comparing the number of documents of the area in question with the remaining documents not classified in this area.

The main data obtained in this study are that emergency physicians who publish in EMERGENCIAS contribute a similar scientific work volume to that of those who publish in journals indexed in the SCI, although with a lower percentage of original studies. However, the volume of work in general, and of originals in particular, received for consideration by the Editorial Committee of our journal have increased during the period posterior to that of the study making us optimistic with respect to the role which EMERGENCIAS may play as a vehicle of diffusion of our investigation⁵. The recent changes introduced in the journal will hopefully help to improve the visibility of the articles published in EMERGENCIAS which, after having become consolidated as the Spanish journal of reference in our speciality should jump to other Spanish-speaking countries⁶. In addition to this, we believe that the recent incorporation of a searcher on the website of EMERGENCIAS will particularly contribute to this improvement and will easily allow the articles of the last 10 years which are of interest based on the author, key words or the content of the Abstract to be found.

The scientific production in Emergency Care and Emergency Medicine by autonomous communities and by centres did not differ in distribution and ranking from the bibliometric map of Spain in the period 1999-2004 published by Camí et al⁷. Nonetheless, some centres and, particularly, the Emergency Departments which hardly appeared in the map previously mentioned, have an important presence in the scientific activity of emergency care/emergency departments in both the journals included in the SCI and overall in EMERGENCIAS. If the "redistribution" of scientific quality based on

the GNP and the population are also added to this, it can be seen that working in theoretically less powerful hospitals from a scientific point of view is not an obstacle to carry out publications in the field of emergency medicine. This is undoubtedly due, in part, to the fact that the distribution of emergency patients is similar throughout Spain with respect to the clinical characteristics and rarities, which is at least a source of Clinical Cases and Letters to the Editor which are of unquestionable interest in healthcare practice. On the other hand, while Catalonia was the leader in the ranking of productivity in journals indexed by the SCI, the autonomous community of Madrid headed the articles published in EMERGENCIAS. Independent of the involvement of other factors, it is possible that the fact that Dr. Manuel Moya Mir, the previous Director of EMERGENCIAS, worked in the Hospital Puerta de Hierro of Madrid has led to part of the scientific production of this hospital in particular, and perhaps of this autonomous community in general, being preferentially submitted to EMERGENCIAS in detriment to other journals indexed by the SCI.

Most of the bibliometric characteristics differ between the scientific production published in EMERGENCIAS and that published in journals of the SCI. With respect to the greater presence of original articles in indexed journals, the publishing of our best studies in already indexed journals is an endemic disservice of the different biomedical publications and Spanish authors, whatever their specialty, since the investigator seeks the greatest impact factor possible for his/her scientific production⁸⁻¹⁰. Nonetheless, some Spanish journals have been able to break this vicious circle and have

achieved more than notable impact factors in their specialty^{11,12}. With respect to the authorship of the studies, and, specifically, the order of signing and dependence on an Emergency Care/Emergency Department, the studies published in EMERGENCIAS are more often signed by emergency physicians than in those included in SCI journals. In addition to the lower number of originals, this may be related to the greater presence of authors independent of other departments or the lesser presence of collaborations with other departments of their own hospital. There is also, obviously, the fact that emergency physicians prefer to publish in their own journal, especially for articles written in Spanish.

In a previous study we considered the different aspects of Spanish biomedical investigation in Emergency Care and Emergency Medicine and analysed the scientific production of the period 2000-2004 based on the registries of the National Library of Medicine (PubMed/Medline)^{13,14}. Despite having limitations due to the format in which the secondary authors of a study were registered or the lack of affiliation in the Letters to the Editor and Clinical Notes, 34% were discarded from the registries obtained referring to Emergency Care/Emergency Medicine because the studies had been carried out by authors not related to the Emergency Department or the subject of the study. For example, Andalusia went to 5th place in scientific production precisely because of the dependence of the emergency department on intensive care services. Something similar may have occurred in the present study, since 20% of the studies obtained in the SCI are from emergency departments dependent on intensive care units¹⁵.

The present study has a series of limitations which should be discussed. The SCI does not specifically classify the documents by the area of investigation or by the speciality of the investigators but rather by the journal in which the studies are published. This probably causes a bad classification of a notable number of documents similar to what Camí recently pointed out in an editorial in EMERGENCIAS¹⁶. As previously commented, the recent inclusion of an article seeker in the journal website after the completion of this study and submission to EMERGENCIAS, may lead to the appearance of small bibliometric differences on its repetition precisely due to the manual search used to carry out our study. Another limitation may be the fact of referring to scientific production with impact factor which discards journals in the setting of visible emergency care and emergency medicine in Medline but not yet included in the SCI, as

occurs for example with the journal *European Journal of Emergency Medicine* which has been accepted by the SCI this year and will have an impact factor after 2010. A volume (not large a priori) of scientific production of emergency physicians may have been channelled through these journals which were not included in our study. Finally, the most important limitation is that since emergency medicine is not, to date, a recognised speciality in our country (in contrast to the United States, Canada, Australia, the United Kingdom and Ireland, among others), and the investigative activity is not structured in most Spanish emergency care centres or services. The fundamental cause for this should be sought in the high percentage of the work day being dedicated to healthcare in addition to the small number of work staff and the little employment stability up to now. Hopefully the future advent of the speciality will very positively influence the evolution of investigative activity.

References

- Miró O, Salgado E, González-Duque E, Tomás S, Burillo-Putze G, Sánchez M. Producción científica de los *urgenciólogos* españoles durante los últimos 30 años (1975-2004). Análisis bibliométrico descriptivo. *Emergencias* 2007;19:6-15.
- Miró O, Salgado E, González-Duque E, Tomás S, Burillo-Putze G, Sánchez M. Producción científica de los *urgenciólogos* españoles durante los últimos 30 años (1975-2004). Análisis comparativo con la actividad de otras especialidades en España y con la de *urgenciólogos* de otros países. *Emergencias* 2007;19:59-64.
- Tintinalli JE, Kelen GD, Stapczynski JS. *Emergency Medicine: a comprehensive study guide*, 6th edition. McGraw-Hill Companies Inc., Nueva York, Estados Unidos, 2004.
- Miró O, Burillo-Putze G, Tomás Vecina S, Pacheco A, Sánchez M. Estimación del impacto bibliométrico de EMERGENCIAS durante los últimos 10 años (1997-2007). *Emergencias* 2007;19:187-94.
- Miró O, Burillo-Putze G, Tomás Vecina S, Pacheco Rodríguez A, Sánchez Sánchez M. Proceso y actividad editorial de EMERGENCIAS. *Emergencias* 2007;19:136-43.
- Miró O, Burillo-Putze G, Tomás Vecina S, Sánchez M, Pacheco A. La nueva imagen de EMERGENCIAS. *Emergencias* 2008;20:1-4.
- Camí J, Suñé-Piñol E, Mendez-Vasquez RI. Mapa bibliométrico de España 1994-2002: Biomedicina y Ciencias de la Salud. *Med Clin (Barc)* 2005; 124:93-101. Disponible en URL: <http://www.isciii.es/mapabiomedico>.
- Olivé A, Cifuentes I, Vázquez Corbacho D, Roca J. Rumbo a lo desconocido: destino final de los resúmenes presentados a un congreso de reumatología. *Rev Esp Reumatol* 2004;31:122-5.
- San Román Terán CM, Alcalá-Zamora Salinas J, Guil García M, Fernández Sepúlveda S, Laín Guelvenzu JM, Peláez Domínguez S. Mala conducta científica en la comunicación de resultados biomédicos, ¿costumbre consagrada por el uso o laxitud de la ética? *Rev Clin Esp* 2004;204:393-7.
- Camí J. Impactolatría: diagnóstico y tratamiento. *Med Clin (Barc)* 1997;109:515-24.
- Bosch X, Villacastín JP, Alfonso F. Difusión, reconocimiento científico y repercusión. *Rev Esp Cardiol* 2001;54:1463-5.

- 12 Bosch X, Alfonso F, Bermejo J. Una revista científica internacional de calidad dedicada a las enfermedades cardiovasculares. *Rev Esp Cardiol* 2003;56:1239-45.
- 13 Burillo-Putze G, García-Castrillo Riesgo L, Miró Andreu O, Montero Pérez J, Núñez Díaz S, Tomás Vecina S, et al. ¿Qué investiguen ellos? *Emergencias* 2005;17:107-109.
- 14 Burillo-Putze G, García-Castrillo Riesgo L, Miró Andreu O, Montero Pérez J, Núñez Díaz S, Tomás Vecina S, et al. Producción científica indexada en medicina de urgencias y emergencias (2000-2004). *Emergencias* 2006;18(Supl 1):301.
- 15 Junta Directiva Nacional y Consejo de Dirección de la Sociedad Española de Medicina de Urgencias y Emergencias (SEMES). Sobre el modelo andaluz de medicina crítica. *Emergencias* 2004; pendiente de encontrarlo en la web.
- 16 Camí J. Cuantificando la actividad científica en urgencias. *Emergencias* 2007;19:55-6.

Artículos publicados en EMERGENCIAS entre 2000 y 2004: participación de los *urgenciólogos* y comparación con su aportación en las revistas indexadas

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Objetivos: Analizar las principales características de la producción científica de los *urgenciólogos* españoles entre 2000 y 2004, tanto en revistas indexadas por el *Scienti Citation Index* (SCI) como en la revista EMERGENCIAS, al no encontrarse ésta incluida en dicha base de datos.

Método: Se revisaron manualmente todos los documentos publicados en EMERGENCIAS durante el período 2000-2004. Se aceptó como documento de un *urgenciólogo* español si en la filiación figuraba su erradicación en España y cualquiera de las siguientes expresiones identificativas de un servicio-dispositivo de urgencias: urgencias, *urgències*, *urxencies*, *larrialdia*, *larrialdia*, *emergentziak*, emergencias, *emergències*, *emexrencias*, *emergency*, 061, SAMU, 1006, SUC, SEM, SEMSA, SERCAM, 112, DEIAK o EPES. Esta misma estrategia fue la utilizada para la búsqueda en revistas del SCI durante el mismo período. Se registraron y analizaron los principales datos e indicadores bibliométricos utilizados en los estudios previos de nuestro grupo. Para determinar las líneas de investigación se utilizó el índice del Tratado de Medicina de Urgencias de Tintinalli, ligeramente modificado.

Resultados: En el periodo estudiado, los *urgenciólogos* españoles publicaron 594 documentos, 290 en EMERGENCIAS y 304 indexados por el SCI. El 51% de ellos fueron realizados por autores pertenecientes a 26 servicios de urgencias hospitalarios y 3 Sistemas de Emergencias, además de la propia SEMES. Hubo diferencias importantes entre la aportación que realizó cada Comunidad y cada Centro a EMERGENCIAS y al SCI en cuanto a la producción científica, en las características bibliométricas y en los temas de los trabajos. Madrid predominó en EMERGENCIAS, Cataluña y Andalucía en el SCI y presentaron una producción balanceada Galicia y el País Vasco. La producción científica publicada en EMERGENCIAS presentaba un menor número de originales, fue firmada por menos autores, el *urgenciólogo* firmó con mayor frecuencia en primer lugar, hubo una mayor frecuencia de *urgenciólogos* extrahospitalarios y de pertenencia a un servicio de urgencias independiente.

Conclusiones: Los *urgenciólogos* que publican en EMERGENCIAS aportan un volumen similar de trabajos a los que publican en revistas indexadas en el SCI, aunque la mayoría de características bibliométricas y la temática difieren entre ambas. [*Emergencias* 2008;20:308-315]

Palabras clave: Medicina de urgencias. Investigación. Bibliometría. *Urgenciólogos*.