

# ACTA CLINICA CROATICA: PROGRESS OF A JOURNAL STEP BY STEP

Gordana Ramljak

Medical Library, Sestre milosrdnice University Hospital Center, Zagreb, Croatia

**SUMMARY** – The journal Acta Clinica Croatica (ACC) was founded in 1962 under the title Anali Bolnice Dr. M. Stojanović. In 1995, the title of the journal was changed into its present form and ever since all papers have been published in English. In 2000, the electronic (online) edition of the ACC was released in addition to the print version. The paper presents development of the journal from 1962 to 2012 based on the analysis of the following SCOPUS citation index parameters: type and number of documents published in the journal; number of citations; and number of domestic and foreign authors. The studied period was analyzed in three time segments: the period from 1995 to 1999, the period from 2000 to 2006 and the period from 2007 to 2012. The same parameters were analyzed in the Web of Science/SCI-Expanded bibliographic and citation index for the 2007-2012 period. The increasing number of documents, authors (both domestic and foreign) and citations demonstrates gradual rise in the quality, visibility and impact of the journal. The fifty years of experience show that a goal, at first very distant and almost unachievable, may be reached by progressing step by step.

*Key words: Medical journals; Indexing; Croatia; Publishing; Bibliometrics*

## Introduction

Acta Clinica Croatica (ACC), a professional and scientific journal of the Sestre milosrdnice University Hospital Center and the Institute of Clinical Medical Research, Zagreb, Croatia, was founded in 1962 by Vladimir Hudolin as Anali Bolnice Dr. Mladen Stojanović (ISSN 0523-9419) and published in the Croatian language. Vladimir Hudolin was also the journal's first Editor-in-Chief for 28 years, to be followed by Branko Lang, Zvonko Kusić, Krešimir Rotim and currently Vesna Šerić.

The journal publishes four issues *per* year with the annual author and subject index and one to two supplements containing congress presentations or ab-

stracts. In 1971, the Dr. Mladen Stojanović Hospital was affiliated to the University of Zagreb and named Dr. Mladen Stojanović University Hospital. Consequently, the journal was renamed as Anali Kliničke bolnice "Dr. M. Stojanović" (ISSN 0301-2255, ISSN of supplements 0301-2263).

## *Development in the Republic of Croatia*

In the turbulent times of the Homeland War in Croatia (1991-1995) and great changes in the new independent Croatian State, the hospital name was changed into its original name Sestre milosrdnice University Hospital, used from its foundation in 1846 to the end of the Second World War. In 1991, a completely different title was given to the journal, Acta Clinica Croatica (ISSN 0353-9466, supplement ISSN 0353-9474). As of the 1995 number 3, the journal has been published in English with abstracts in Croatian. A new format of the journal and new design of the cover page by Mihajlo Arsovski have been introduced.

---

Correspondence to: Gordana Ramljak, MA, Medical Library Head, Sestre milosrdnice University Hospital Center, Technical Editor, Acta Clinica Croatica, Vinogradska c. 29, HR-10000 Zagreb, Croatia

E-mail: gordana.ramljak@kbcsm.hr

In the Editorial published in the 1995 number 3, Professor Zvonko Kusić, the then new Editor-in-Chief, and Professor Vida Demarin, Deputy Editor, explained the implemented changes: "The new Editorial Board wish to reorganize the journal structure, to adjust the ACC to the new scientific trends, incorporate the new spirit of science and technology, democracy. ... The concept of the journal has been shifted from medical problems to the scientific approach. Book reviews, calendar of events, reports from conferences, and Letters to the Editor have also been included. The final goal was ambitious, trying to join the European family of high standard and quality journals. By writing in English, a chance to exchange results and ideas with colleagues from other countries has been reopened. Therefore, foreign colleagues have been encouraged to publish their results in the ACC ... Publishing of a high standard and high quality journal was a long process, which should be built up step by step"<sup>1</sup>.

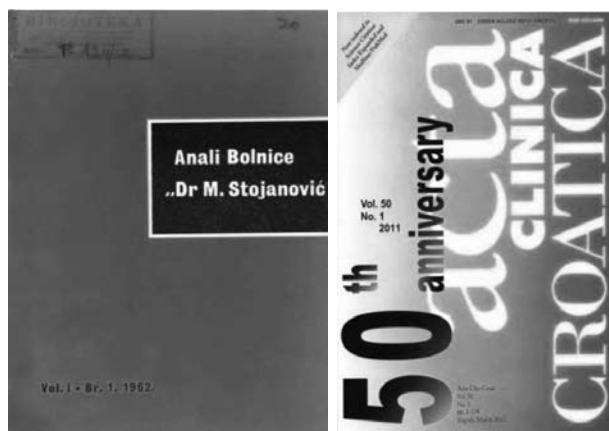


Fig. 1. Covers of the first issue of the first 1962 volume and the first issue of the 50<sup>th</sup> anniversary volume in 2011.

In 2000, the electronic (online) edition of the ACC was released in addition to the print version. Free access to the journal contents was available on the hospital web page<sup>2</sup>, as well as on the portal of the Croatian scientific journals named HRCAK<sup>3</sup> (online edition ISSN 1333-9451).

### Quality and impact of the ACC

The decision of the Editorial Board to publish all journal contents in the English language had a positive effect on the journal impact since its contents

could be read by the international scientific and professional community. Following that first step in the ambitious plan for advancement of the journal and increase in its quality and impact, the second crucial step was made in 2000 with the electronic (online) edition freely available to all potential readers all over the world. Online edition and open access policy increased the visibility of ACC and subsequently its impact, which resulted in inclusion of the journal into the Web of Science, section SCI-Expanded citation index in 2007. One year later, ACC was included in the PubMed/Medline, the most important bibliographic database for biomedical sciences.

In 2009, the journal received an impact factor of 0.188 for the first time. ACC is also indexed in the EMBASE bibliographic database and SCOPUS citation index (since 1993).

Inclusion of the ACC into online bibliographic and citation indexes had a significant effect on further rise of the journal impact, clearly documented by a slight increase in the number of citations and impact factor.

The journal contents in English, online edition in the open access and inclusion in the major online bibliographic and citation indexes had a positive effect on the increase not only in the number of published items and authors but also of foreign authors and citations, which at long run has contributed to the quality and scientific relevance of the journal.

### Materials and Methods

The analysis comprised all papers and other items published in the ACC in the period from 1995 to 2012. Citation analysis was performed using data available in the SCOPUS and Web of Science (SCI-Expanded) databases.

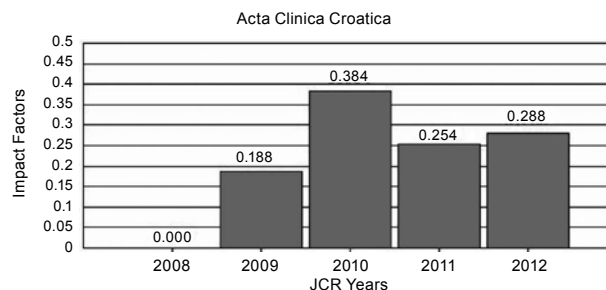


Fig. 2 Impact factor trend for ACC (display from the Journal Citation Reports – JCR, ISI Web of Knowledge, January 2014).

Table 1a. Data on the type and number of documents published in ACC in SCOPUS (1995–1999)

Document type	1995	1996	1997	1998	1999
Article	25	14	21	38	33
Review	4	2	10	10	2
Short survey	2	1			
Editorial			1 (suppl.)	2 (suppl.)	2
Conference paper			27 (suppl.)	39 (suppl.)	19
Letter			1	1	2
Number of documents					
Regular issue	31	17	32	49	58
Supplement	0	0	28 (suppl.)	41 (suppl.)	0
<b>Total number of documents</b>	<b>31</b>	<b>17</b>	<b>60</b>	<b>90</b>	<b>58</b>

Table 1b. Data on the type and number of documents published in ACC in SCOPUS (2000–2006)

Document type	2000	2001	2002	2003	2004	2005	2006
Article	34	29	56	29	30	28	40
Review	6	8	15	11	12	10	13
Short survey						1	
Editorial	3	1	3				2
Conference paper	2	4	5	11	51	6	9
Note	3						
Letter	2						
<b>Total number of documents</b>	<b>50</b>	<b>43</b>	<b>79</b>	<b>51</b>	<b>93</b>	<b>45</b>	<b>64</b>

Table 1c. Data on the type and number of documents published in ACC in SCOPUS (2007–2012)

Document type	2007	2008	2009	2010	2011	2012
Article	49	49	40	66	132	82
Review	11	2	12	6	12	8
Short survey						
Editorial	1	2	1	1	1	
Conference paper						
Regular issue	6	4	9	20		3
Supplement	0	0	13	12		25
Note			1	1		1
Letter				1		1
Number of documents						
Regular number	67	57	63	95	145	95
Supplement	0	0	13	12	0	25
<b>Total number of documents</b>	<b>67</b>	<b>57</b>	<b>76</b>	<b>107</b>	<b>145</b>	<b>120</b>

The studied period was analyzed in three time segments: the period from 1995 to 1999, the period from 2000 to 2006, and the period from 2007 to 2012. These time segments were determined based on the most important events in the fifty years of publication. Since 1995, all papers have been published in the English language, and since 2000 the electronic (online) edition in the open access has been added to the print edition. In 2007, the journal was included in the Web of Science citation index, SCI-Expanded section, and one year later in the PubMed/MEDLINE.

The last year included in the analysis was 2012 because at the time this paper was being prepared (January 2014), issue 4 for 2013 was not published and the 2013 issues 1, 2 and 3 had been indexed in the MEDLINE, SCOPUS and Web of Science indexes. Although the print issues for 2012 and 2013 were published more promptly than in the preceding years, the online edition for 2012 and 2013 was published with great delay and only on the HRCĀK portal <http://hrcak.srce.hr/acta-clinica-croatica>, where online issues 2, 3 and 4 for 2012 were available at the end of 2013 and online issues 1 and 2 for 2013 were available in January 2014. Publication of online issues on the journal home page <http://www.acta-clinica.kbcm.hr/> was interrupted completely in July 2012 due to financial and organizational reasons. All this might have had a negative effect on the time and number of citations, so the last year included in the analysis was 2012.

#### *Analysis of the number of papers and citations*

The data obtained showed gradual increase in the number of papers and other items published in the ACC, as well as in the number of citations in the SCOPUS bibliographic and citation index, especially during the 2007–2012

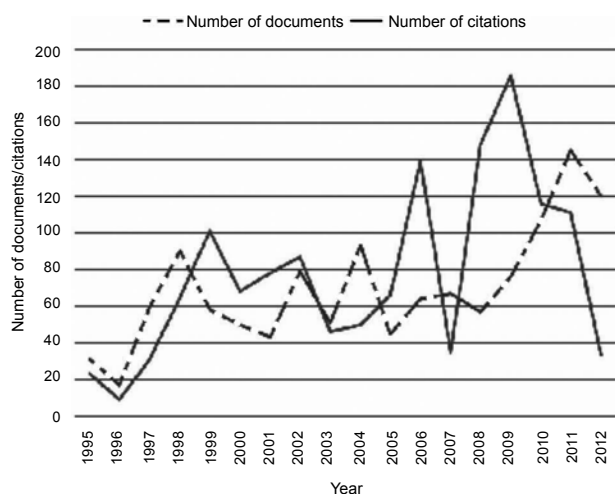


Fig. 3. Number of documents and citations from ACC in the SCOPUS citation index (1995-2012).

period (Tables 1a, 1b, 1c and Fig. 3).

An increasing trend recorded in the 2007-2012 period on the Web of Science is presented in Table 2 and Figure 4. This increase is attributable to the ACC inclusion in the Web of Science/SCI Expanded and PubMed/MEDLINE citation indexes.

Figure 3 shows the number of documents and citations from ACC in the SCOPUS citation index throughout the 1995-2012 period. The analysis made in January 2014 shows gradual increase in the number of documents and citations from 1995 to 2011. In 2012, the number of documents keeps growing but

Table 2. Data on the type and number of documents in the ACC and number of citations in the Web of Science/SCI-Expanded (2007-2012)

Document type	2007	2008	2009	2010	2011	2012
Article	32	32	64	64	70	96
Review	3	2	1	5	18	13
Biography	3	7	3	4		
Editorial	4	3	3	4	6	6
Congress paper						1
News	2	3	5	5	3	4
Letter				1		1
<b>Total number of documents</b>	<b>44</b>	<b>47</b>	<b>76</b>	<b>83</b>	<b>97</b>	<b>120</b>
<b>Total number of citations</b>	<b>16</b>	<b>110</b>	<b>131</b>	<b>58</b>	<b>77</b>	<b>26</b>

the number of citations does not, which is most probably due to the previously discussed reasons, such as delayed publication of the online edition only on the HRCĀK portal and the period in which the citation peak occurs.

Table 2 shows the type and number of documents in the ACC as well as the number of citations in the Web of Science /SCI-Expanded in the 2007-2012 period. The ACC was included in the Science Citation Index Expanded (SCI-Expanded) in 2007.

Comparison of data analyzed in the SCOPUS with those in the Web of Science/SCI-Expanded has shown difference in the total number of documents published in the ACC in certain years during the 2007-2012 period. Detailed analysis of data in both citation indexes has pointed to the possible explanation. The SCOPUS list of sources has two separate items for the journal: one for regular issues "Acta clinica Croatica" (for the year 1995 and earlier and for the years 1996-2013) and the other for supplements "Acta clinica Croatica.Supplement" (for the years 1997, 1998, 2009, 2010 and 2012). However, for the years in which supplements were not indexed separately, data on the documents published in the ACC supplements have been included as items in regular issues, which is evident by detailed viewing of all documents. For example, the supplements for the year 2011 are not listed as a separate item in the SCOPUS source list and the total number of documents is 145. By viewing the documents, it becomes clear that the documents published in supplement issues of

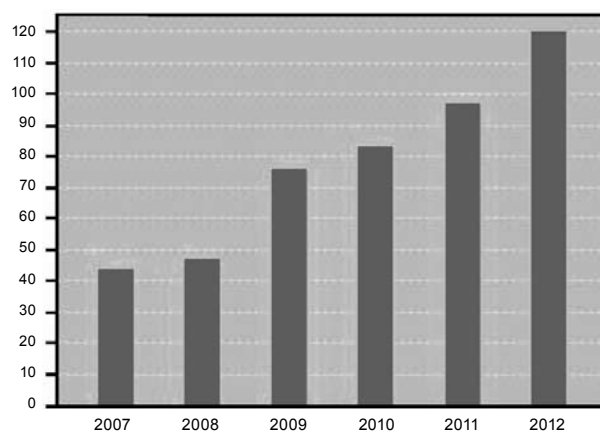


Fig. 4. Increase in the number of documents from ACC indexed in the Web of Science-SCI Expanded (2007-2012).

the ACC have been indexed under regular issues. The number of documents in the Web of Science for the same year amounts to 97.

Figure 4 illustrates the increase in the number of documents published in the ACC from 2007 to 2012 (analysis of data from the Web of Science, January 2014).

In the 2007-2012 period, a total of 467 papers published in the ACC and indexed in the Web of Science received a total of 418 citations by January 2014. The number of citations for 2012 is small due to delayed publication of the online edition and the fact that a certain time has to elapse before the paper receives citations.

#### *Analysis of papers in the ACC by author's nationality*

This analysis was done based on the data available in the SCOPUS from 1995 to 2012. The number of documents was assessed by author's address as quoted in the SCOPUS. The analyzed period was also di-

vided into three time segments. The following international car codes were used to denote the countries of the authors' origin:

A = Austria	J = Japan
BIH = Bosnia and Herzegovina	MEX = Mexico
BG = Bulgaria	MK = Macedonia
CN = China	MNE = Monte Negro
CZ = Czech Republic	N = Norway
D = Germany	P = Portugal
DK = Denmark	PL = Poland
E = Spain	RCH = Republic of Chile
F = France	RO = Romania
GB = Great Britain	RUS = Russia
GR = Greece	SLO = Slovenia
H = Hungary	SK = Slovakia
I = Italy	SRB = Serbia
IL = Israel	TR = Turkey
IR = Iran	UA = Ukraine
IRL = Ireland	USA = USA
	WAN = Nigeria

Table 3a. Distribution of documents in the ACC by author's nationality as quoted in the SCOPUS (1995-1999)

	1995	1996	1997	1998	1999
Domestic authors	31	17	31 + 27 (suppl.)	47 + 21 (suppl.)	43
Foreign authors	0		1 (I)	2 (USA)	7 (3 D, 1 BIH, 1 CH, 1 UA, 1 USA)
				18 (suppl.) (3D, 3 PL, 3 USA, 2 SLO, 2A, 2 H, 1 CZ, 1 IL, 1 GB)	
<b>Total</b>	<b>31</b>	<b>17</b>	<b>59</b>	<b>90</b>	<b>50</b>

Table 3b. Distribution of documents in the ACC by author's nationality as quoted in the SCOPUS (2000-2006)

	2000	2001	2002	2003	2004	2005	2006
Domestic authors	40	37	60	42	84	40	51
Foreign authors	4 (3 PL, 1 USA)	4 (2 D, 1 BIH, 1 CZ)	19 (1 USA, 3 SLO, 2 D, 1 A, 1 BG, 1 CZ, 1 H, 1 I, 1 PL, 1 SK, 1 CH, 1 GB)	9 (3 USA, 1 A, 1 BIH, 1 D, 1 GR, 1 I, 1 SLO)	14 (4 BIH, 2 E, 1 A, 1 BG, 1 CN, 1 GR, 1 SLO, 1 SK, 1 GB)	6 (2 GR, 1 BIH, 1 D, 1 SLO, 1 USA)	15 (3 D, 3 USA, 2 BIH, 2 IL, 1 A, 1 MEX, 1 P, 1 RUS, 1 E)
<b>Total</b>	<b>44</b>	<b>41</b>	<b>79</b>	<b>51</b>	<b>98</b>	<b>46</b>	<b>66</b>

Table 3c. Distribution of documents in the ACC by author's nationality as quoted in the SCOPUS (2007-2012)

	2007	2008	2009	2010	2011	2012
Domestic authors	61	47	51+9 (suppl.)	66 + 5 (suppl.)	87	67 + 3 (suppl.)
Foreign authors	4 (2 USA, 1 F, 1D)	9 (2 A, 2 BIH, 1 BG, 1 IL, 1 PL, 1 SLO, 1 USA)	8 (2 SRB, 2 USA, 1 BIH, 1 F, 1 GR, 1 NL)	18 (9 D, 4 BIH, 4 SRB, 2 A, 2 SLO, 1 CZ, 1 IR, 1 IL, 1 MK, 1 MNE, 1 PL, 1 USA)	64 (14 SRB, 10 BIH, 10 D, 5 SLO, 5 USA, 3 A, 3 RUS, 2 BG, 2 I, 2 MNE, 1 CZ, 1 IR, 1 IL, 1 MK, 1 N, 1 PL, 1 TR, 1 GB)	25 (4 BIH, 3 D, 3 SRB, 2 IR, 2 I, 2 SLO, 2 TR, 2 GB, 1 MK, 1 MNE, 1 WAN, 1 PL, 1 USA)
	0	0	5 (suppl.) (2 BIH, 1 MK, 1 MNE, 1 USA)	7 (suppl.) (4 D, 1 BIH, 1 IRL, 1 SLO)	0	20 (suppl.) (6 I, 4 MEX, 2 RCH, 2 DK, 2 D, 2 E, 1 J, 1 RO)
<b>Total</b>	<b>65</b>	<b>56</b>	<b>73</b>	<b>106</b>	<b>151</b>	<b>115</b>

The difference in the total number of documents by domestic and foreign authors in Tables 3a, 3b and 3c as compared with the total number of documents in Tables 1a, 1b and 1c can be explained by the fact that a number of documents were written by both domestic and foreign co-authors. In spite of these small deviations, these data show gradual increase in the number of documents by foreign authors, as well as in the number of countries the authors come from.

#### *Fifty years of experience as a solid base for future growth*

The majority of quality scientific and professional journals, at least in the field of medicine, publish papers in the English language<sup>4</sup>, which increases their visibility, i.e. the impact of these papers. Authors from small countries and small language communities, such as Croatia, publish their papers in international high ranking journals, whereas Croatian journals are chosen mostly if the language of publication is English. Poor quality of English is often one of the reasons that papers written by Croatian authors are not accepted for publication by high ranking scientific

journals, both international and domestic. Likewise, the impact of a paper on its readers largely depends on the quality of English.

Therefore, the Editorial Board of the ACC pays great attention to the quality of the English language and has been cooperating with the same English language editor since 2000. Authors are not charged any fees for English language editing, i.e. these costs are fully covered by the ACC.

Publication of the ACC is mostly funded by subscription (the majority of subscribers are employees of the Sestre milosrdnice University Hospital Center) and is partly supported by the Croatian Ministry of Science, Education and Sports. The journal publishes no commercial advertisements and authors do not pay any processing fees. The financial means gathered are insufficient for regular publication of print and electronic (online) edition with full support of the Open Access Initiative. Since 2012, the electronic (online) edition of the ACC is not available on the journal home page, but only on the Croatian portal of scientific journals HRČAK (<http://hrcak.srce.hr/acta-clinica-croatica>), since the process of uploading articles on this portal in the pdf format is simple and quick.

Up-to-date publication of journal contents is very important because the potential readers get quick and easy access to the articles. It also affects the speed and procedure of indexing of a scientific journal in major bibliographic and citation indexes. This procedure is much shorter if the journal contents are available on the journal homepage or if the Editorial Office or Publisher send the contents to the bibliographic or citation index in an electronic format. The ACC supports the Open Access Initiative with a two-month delay due to the fact that subscription to the print edition is the principal source of funding.

The founder and first Editor-in-Chief of the ACC launched a small hospital journal with a vision of making it an esteemed professional journal, which came true in the first thirty years. In the 1990s, the Editors took steps crucial for further scientific advancement of the medical journal in the next twenty years. Despite many difficulties and challenges, the journal has progressed step by step in accordance with the ideas of its first Editor-in-Chief and the editors in the 1990s, and has followed an ascending curve of development.

#### *Future steps*

The next steps in the future progress of ACC should adopt current solutions for the following issues:

- electronic (online) editions on the journal home page <http://www.acta-clinica.kbcm.hr/> and on the HRČAK portal (<http://hrcak.srce.hr/acta-clinica-croatica>), with simultaneous publication of the print and online editions, including 'ahead of print' (full open access);

- implementation of an efficient system of online submission, editing and publishing, ever more frequently used by many scientific journals all over the world;
- increasing the number of foreign and domestic reviewers in order to upgrade the quality of papers submitted to ACC;
- long-term policy of adequate funding from several sources; and
- professionalizing of the Editorial Office, which means employing trained staff for professional and clerical work.

Perceiving the significance of quick and efficient solving of the aforementioned issues is crucial for further progress of ACC and increase in the quality, visibility and impact of the journal. The fifty years of experience show that the goal, at first very distant and almost unachievable, may be reached by progressing step by step.

#### References

1. KUSIĆ Z, DEMARIN V. Editorial. *Acta Clin Croat* 1995;34(3):135.
2. *Acta clinica Croatica* web site <http://www.acta-clinica.kbcm.hr/>
3. HRČAK portal web site <http://hrcak.srce.hr/acta-clinica-croatica>
4. MARUŠIĆ A, MARUŠIĆ M. Small scientific journals from small countries: breaking from the vicious circle of inadequacy. *Croat Med J* 1999;40(4):508-14.

#### Sažetak

### ACTA CLINICA CROATICA: NAPREDAK KORAK PO KORAK

*G. Ramljak*

Časopis *Acta Clinica Croatica* počeo je izlaziti 1962. godine na hrvatskom jeziku pod nazivom *Anali Bolnice Dr. M. Stojanović*. Godine 1995. naziv časopisa se mijenja u današnji, a svi radovi se objavljuju na engleskom jeziku. Godine 2000. objavljuje se i mrežna (*online*) verzija. U radu se prati razvoj časopisa od 1962. do 2012. godine temeljem analize vrste i broja radova, broja citata te broja domaćih i stranih autora u indeksnoj i citatnoj bazi SCOPUS (u tri razdoblja). Isti su parametri analizirani u bazi Web of Science/SCI-Expanded za razdoblje od 2007. do 2012. godine. Uzlazna krivulja rasta broja radova, autora i citata svjedoči o postupnom povećanju kvalitete, vidljivosti i značajnosti časopisa. Pedesetogodišnje iskustvo pokazuje da se korak po korak može stići i do na prvi pogled jako udaljenog ili teže ostvarivog cilja.

Ključne riječi: *Medicinski časopisi; Indeksiranje; Hrvatska, Izdavaštvo; Bibliometrija*