

Educatione ad Excelentiam – Ten Years of the Croatian Medical Journal

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The first issue of the *Croatian Medical Journal* (*CMJ*, Fig. 1) appeared in February 1992 (1). The *CMJ* is now ten years old – a good time to stop and take a look at the past and make plans for the future.

The Past

Although the earliest memories fade first, those of the *CMJ* remain vivid, perhaps because they coincided with the tragic aggression against Croatia in 1991. Actually, the life of the Journal began before it was officially born. Preparation of the first issue, planned for March 1992 (Fig. 1), was well under way when the first attacks on Croatian cities began in the early autumn of 1991 (1). We witnessed enormous suffering of the civilian population: refuge, killings and wounding, and siege and destruction of many Croatian towns. Health care professionals, although without formal training in war medicine, managed to adapt to the war situation and provide adequate care for the war casualties (2). We wanted to document the experience and knowledge Croatian physicians had gained in war medicine and decided to produce a special supplement to the first journal issue (Fig. 2). It required a huge amount of work and efforts, especially in the circumstances when it was too complicated to get even the simplest task done, such as prepare the cover page. We worked on the supplement's covers at a printing house in Zagreb during a blackout. Under the dim light, the printers could not see well which colors they mixed and the red cross on the front page picture came out green. Nevertheless, we could still laugh and make jokes, despite all the problems.

A number of Editorial Board meetings have been held during the wartime – a few members had to travel through battle zones to attend, and one of the meetings was held during an air-raid alert (Fig. 3). After the first 76-page long war supplement was issued, new destruction followed – siege of Vukovar, Dubrovnik, and other Croatian towns, and more civilian suffering prompted us to publish another war supplement in 1992 (Fig. 4). On 235 pages, it brought 52 articles from different fields, including children casualties, medical problems of refugees, prisoners of war, destruction of medical institutions, and organization of medical care on the battlefield.

In parallel with preparing regular issues (4 a year) and two war supplements, we also published three books. After the fall of Vukovar in November 1991, we collected testimonies of the medical staff from Vukovar hospital, from which 200 patients were taken away and executed on the nearby Ovčara field (3,4). Their testimonies were published them in a book "Medical Testimony of the Vukovar Tragedy" (Fig. 5). The second booklet was a call for help to the Osijek University, which was heavily damaged. The third book, published in 1996, contained the war memoirs of Eduard Klain, renowned psychoanalyst from Zagreb, who described his work on the establishment of a system of psychological support to the war victims and his view of the war (5). Early during the war, we also contributed to the establishment of an international meeting place for physicians of Croatian origin – World Association of Croatian Physicians, WACP (6), which brought several prominent



Figure 1. The first issue of the *Croatian Medical Journal*, March 1992. The designers of the cover page were Joško Marušić and Goce Vaskov from the famous Zagreb School of Animation.



Figure 2. The first publication of the *Croatian Medical Journal – War Supplement*. It came out in 1991, before the publication of the first regular issue in 1992. The cover page shows air-attack on the Health Center in Vrlika, a small town in the hinterland of the city of Split on the Adriatic coast, on August 26, 1991.



Figure 4. The second War Supplement, published in 1992. The photograph in the background of the front page is the Vukovar main street. The insets are a video tape reconstruction of a 250 kg airplane bomb that penetrated six floors of the Vukovar Hospital on October 5, 1991. Luckily, the bomb did not explode.

medical researchers to our Editorial and Advisory Boards. Through the WACP, we also found our first professional publisher, Mr. Wolfgang Pabst and his Pabst Science Publishers, with whom we excellently collaborated for 9 years.

Working with many Croatian professionals from different fields of medicine, we learned that they had enormous experience and very important data, but little or no knowledge of how to present them to the international medical community. Through helping them to publish their results in the *CMJ*, we instituted an author-helpful policy (7,8), which became our



Figure 3. The first Editorial Board of the *Croatian Medical Journal*. The photograph was taken in November 1991, during an air-raid alarm, at the main stairs of the Zagreb School of Medicine. At that time, we had so much work that we did not think of going down into the basement shelters.

motto: “Through education to excellence”. This effort resulted in more than 150 articles about medical aspect of the war published in the *CMJ*, and more than 100 articles in other international journals (9).

We also actively participated in humanitarian activities to help the war victims in Croatia and neighboring Bosnia and Herzegovina, where destruction and human suffering were even worse (10-12). To inform about the role of physicians and health care system during war, we introduced a special journal section “Physician in War”, in which Slobodan Lang, renowned Croatian public health worker and humanist, explored the ways in which physicians could promote peace activities (13). We also initiated and took part in several peace-promoting activities (14,15) and thus paved the way to the current global movement “through health to peace” (16,17).

Peace promotion activities also contributed to the further development of our educational efforts. In collaboration with Dr Edward J. Crispin from Guelph, Ontario, Canada, a representative of the International Physician for the Prevention of Nuclear War (IPPNW), we have developed a COLLEDEX Project (COLLAboration, EDucation, EXperience) aimed at education of physicians from the war-affected countries (in informal cooperation with the McMasters University faculty) (Fig. 5). The project still runs on and the education, provided in candidate’s professional field is very much peace promotion-oriented. The candidates are chosen not on the basis of their professional excellency but on their potential contribution to the peace-building efforts in their home countries. “Through health to peace” concept was gradually accepted by the

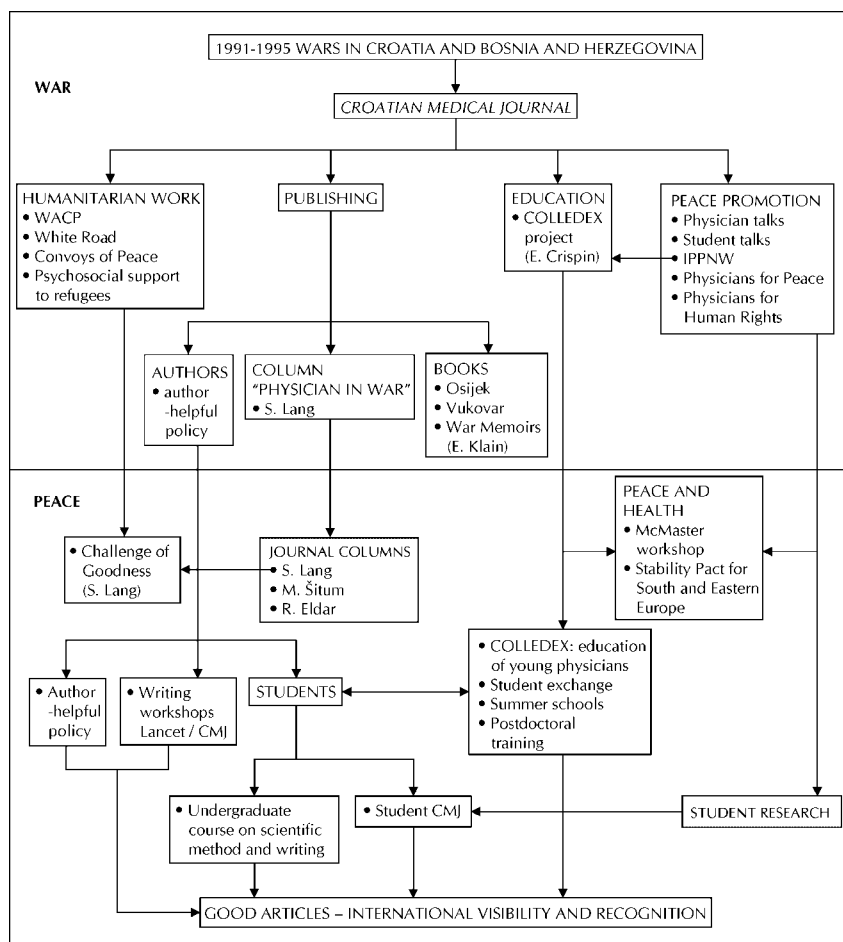


Figure 5. Activities of the Editorial Board of the *Croatian Medical Journal* during and after the 1991-1995 wars in Croatia and Bosnia and Herzegovina.

McMaster University (16), and later incorporated into similar activities of the Stability Pact (see the next CMJ thematic issue in April 2002).

The end of armed conflict in Croatia and Bosnia and Herzegovina in 1995 did not conclude the civilian suffering in this region: massive migration of people, psychological disturbances related to post-traumatic stress, missing family members, expectation of refugees to return home, political and economical turmoil of postcommunist transition were, and still are, just some of the problems facing the two countries (18,19). Volatile situation in Kosovo, Yugoslavia, and in Macedonia, with subsequent NATO attacks on Serbia, showed how the conflict in the region affected and would definitely continue to affect the health of the population in this region (4). In addition to publishing medical aspects of the war and post-war situation and their influence on health (e.g., journal columns *Health Watch* and *Physician in War*), we want to emphasize the need for understanding, collaboration, and forgiveness (Fig. 5). The *CMJ* continues to take part in different peace promotion activities, such as the recent European Stability Pact meeting on "Peace and Public Health" in Skopje, Macedonia (20). Slobodan Lang formulated this as the challenge of goodness to the prevailing language of destruction, hatred, and revenge (21,22).

It is difficult to measure how much we contributed to the peace building in the region, but the enormous effort in this area did not affect the work on the journal. On the contrary, it helped its growth and constant improvement (Fig. 5) (23).

Present

The issues relevant for the health care in transitional, developing and/or newly emerging countries, from the far east (e.g., Georgia and Azerbaijan) to the far south (e.g., Ghana and Brazil), have become an important part of the *CMJ*'s profile. With our help, their medicine and research get presented to the international medical community often for the first time. Actually, this profile of the journal answers the question in the editorial of the first regular *CMJ* issue in 1992: *Who needs Croatian Medical Journal?* (24). The editorial argued that a new journal in a geographically and scientifically small country, such as Croatia, would make an impact on the international scientific community only if it found its special niche. We have found it by acting as the bridge between the so-called scientific periphery and the mainstream science (25). The basis of the bridge is education, with which we started our work and have continued with it to the present day.

After the war, we were able to put more effort into our educational activities (Fig. 5), beside following the author-helpful policy. We realized that what was needed for the advancement of science and scientific communication in Croatia and other countries from the scientific periphery was education in the principles of scientific research and writing, which should start as early in the academic life as possible. Four members of the editorial board and teachers at the Zagreb School of Medicine, with the support of the School's administration, introduced a mandatory course for the second-year medical students, "Principles of Scientific Research in Medicine". The course teaches what is scientific research, how it is done in medicine, how information can be found in medical literature, and how to write a scientific article. The course has been included in the curricula of medical schools at other three Croatian Universities, and we see it as a public health preventive measure to increase the competence of future medical researchers. Students are also encouraged to do and publish their own research. We followed the tradition of the *StudentBMJ* (26) and last year published a special section of the *CMJ* dedicated to research performed either on or by the students. This issue brings the second edition of the student section – the interest of students is growing and we get more and better articles.



Figure 6. Participants and teachers of the first Workshop on Communication in Biomedicine, Split, 13-15 June, 2000. The first workshop was sponsored by the British Council and the Croatian Ministry of Science and Technology.



Figure 7. Participants and teachers of the second workshop on Communication in Biomedicine, Rijeka, 14-16 June, 2001.

Preventive measures take time, and the first results of the undergraduate teaching of scientific method and writing will be visible after many years. Author-helpful policy of the journal reaches a number of physicians who constitute the current body of medical research community. However, those who would benefit most



Figure 8. The first thematic issue, on aging. The issue was a part of an international effort, led by the *Journal of American Medical Association (JAMA)* to publish a global theme issue. Ninety-seven journals from 31 countries participated in the effort. The front page brings a photograph of a Red Cross worker interviewing one of the thousands of elderly people abandoned during the flight of local Serbian population during the military "Storm" action in 1995 (21,22).

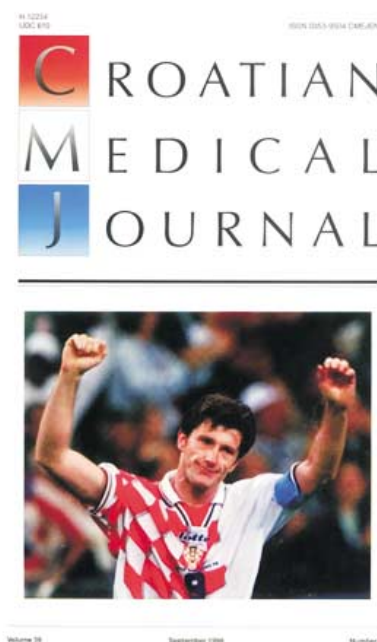


Figure 9. The first "regular" thematic issue – health care in postcommunist transition countries will become the regular theme of the *Croatian Medical Journal*.



Figure 10. The new design of the *Croatian Medical Journal*. The author of the design is Andrea Knapić, a young Croatian designer. The issue brought 25 articles on DNA analysis in forensic sciences, particularly its application in the identification of remains of missing persons.

from such education are residents or young specialists, just embarking on their research career. For the last two years, we have been organizing short workshops on medical writing in collaboration with colleagues from other journals and institutions (*Lancet*, *BioMedCentral*, Cochrane Collaboration, and Office for Research Integrity of the US Department of Health and Human Services). The course teaches skills of presenting data from clinical research. The participants of the workshop come from all major medical centers in Croatia, as well as from other countries in the region: Bosnia and Herzegovina, Slovenia, Macedonia, and Yugoslavia (Figs. 6 and 7). Our aim is to make the workshop an annual event and a source of continuous education in scientific communication for the whole region.

We did not educate only our authors and colleagues, but also ourselves as editors. In collaboration



Figure 11. Publishers of the *Croatian Medical Journal*. From left: Maša Morsan-Gorički, Anda Raič, and Marija Eljuga from the *Medicinska Naklada*.

with other editors through associations such as the European Association of Science Editors, Council of Science Editors, and World Association of Medical Editors, we learned what it meant to be an editor of a medical journal. It was a slow and gradual process – looking back at the journal issues over the last ten years, the errors we made before now seem obvious. But the progress we made is also obvious: articles have been getting better and more relevant to the international scientific community. We have published several thematic issues, which have been very well received. Some of them were done in cooperation with other journals (Fig. 8). Particularly relevant were the issues covering the topics related to the health care organization in transitional and newly emerging countries. Publishing thematic issues from public health became the regular feature of the journal. The first one in the series, *Priorities in Health Care*, intro-



Figure 12. Editorial staff of the *Croatian Medical Journal*. From left: Matko Marušić, Stipe Orešković, Aleksandra Mišak, Dražen Pulanić, Danka Grčević, Dragan Primorac, Nataša Kovačić, Ivana Vodopivec, Ana Marušić, Jadranka Božikov, Jelka Petrak, Marko Kljaković-Gašpić.



Figure 13. Statistical editors. From left: Paško Konjevoda, Jadranka Božikov, Mladen Petrovečki, and Ivan Krešimir Lukić.



Figure 13. Web Editor of the *Croatian Medical Journal* Damir Sapunar, in his laboratory. Electronic publishing is his hobby.

duced a novelty in the journal's design (Fig. 9) and paved the way for the future *Cover Page* section in which we present Croatian natural and historical heritage (23). *Croatian International Publications* were introduced as a regular feature of the Journal in 1997, to present research performed in Croatian scientific institutions. On the inside cover we also present works of art of Croatian painters as well as physicians whose hobby is painting. At the end of the year we regularly publish a funny and self-critical Christmas card.

The increase in the quality of articles was recognized by the international bibliographic databases: the inclusion of the Journal in the *MEDLINE/Index Medicus* in 1998 and in *Current Contents* and other databases of the Institute for Scientific Information in 1999 was the confirmation of the Journal's progress and quality.

The visibility of the Journal greatly increased after we had put full-text articles on our website, www.cmj.hr, in 1999. The access to the Journal's web pages has been steadily increasing, with certain topics attracting considerable attention, such as the review on the ethical aspects of cloning by Davor Solter (27), the review of the depleted uranium and its effects on health by Asaf Duraković (28), and the articles from the thematic issue on DNA analysis in forensic sciences (Fig. 10). Detailed access statistics is available at www.cmj.hr/Stats/index.html.

The last year brought several important changes in the journal: new publisher, publication frequency of six instead of four issues per year, and new design. With the new publisher, Medicinska naklada from Zagreb (Fig. 11), the *CMJ* becomes a truly Croatian product and has the opportunity to influence the quality of medical publishing in the region in general. The new design of the cover page, which has been applauded by many readers, is the work of a young and talented Croatian designer, Andrea Knapić. The design of the inner pages is the work of Andrea Knapić and Marko Kljaković-Gašpić, our production editor.

With six issues per year, the *CMJ* continues to grow: 115 articles were published in 2001, compared with 66 in 2000 and 82 in 1999. With the increase in international visibility and relevance, the manuscript submission rate greatly increased, as well as our rejection rate: from 23% in 1996 (29) up to 58% in 2000 and 49% in 2001. This means that we still have to search actively for topics and articles we would want to publish. A 50% increase in workload and change from a quarterly to bimonthly journal, means a lot of work, but pays off greatly: we published two excellent thematic issues, *DNA Analysis in Forensic Sciences* (Fig. 10) and *Molecular Medicine*.

Future

At the end of 2001, we made a quick poll of a small sample of *CMJ*'s authors, readers, reviewers, and Board members (Table 1). We asked for their suggestions to help us define the future of the journal. Almost 70% of them read the journal regularly or very often. The majority praised the change in the design

of the journal, although there were a few who thought that the cover page with Goran Ivanišević was not adequate for a scientific medical journal. However, the sweeping majority liked it. The photograph on the cover page usually illustrates the content of our *Cover Page* section, which brings articles on Croatian cultural and natural heritage.

The respondents were less satisfied with the choice of topics and articles and varied in their views and suggestions, asking from more case reports to more basic science research. The readers were least satisfied with the regularity of the publication – the reason being the change of the publisher. We apologize to all who had problems receiving the *CMJ* and promise regular mailings in the future. All categories of respondents – authors, readers, reviewers, and Board members alike – scored highest the cooperation and communication with the Editorial office. This is a great compliment to the editorial staff (Fig. 12) and stimulation to keep open and helpful communication with all who contact the Journal.

What suggestions did we get for our future work? Interestingly, there were as many respondents who suggested publishing basic science articles as those suggesting papers from clinical medicine. This may be the reflection of the two large thematic issues published last year, which timed well with the general

Table 1. Survey of *CMJ* authors, reviewers, readers, and editorial board members

Question	Answers
Read <i>CMJ</i> (n = 125):	
regularly or very often	68
sometimes or rarely	40
never	7
Journal features: ^a	
design (n = 115)	4.2 ± 0.9
regularity (n = 111)	4.3 ± 0.9
topics (n = 114)	3.7 ± 0.9
articles (n = 113)	3.8 ± 0.9
Collaboration with Editorial Office (n = 107) ^a	4.5 ± 0.9
Visit website (n = 104):	
regularly	47
never	57
Publish more (n = 87): ^b	
basic research	35
clinical research	43
public health	19
case reports	24
other (short communications, news, reviews)	18
Suggestions for the website	"Improve search facility." "Add color and modernize the design." "Emphasize most important articles." "Make available the current status of a manuscript." "Add short version of the Guidelines for Authors." "Start charging access."
Suggestions for the Journal	"More editorials and timely comments of clinical and basic science topics." "Open a correspondence section." "Make a large educational section, with general physician as a target." "Define several topics of excellence and build on them." "Continue recruiting high quality submissions." "Improve half-tone pictures, unify graphics." "Make a reader survey and focus on their wishes." "Make journal available in university libraries."

^aMean ± SD on a scale from 1 to 5.

^bMore than one item could be chosen.

trend in medical journals in the postgenomics era (30). The clearest message from all respondent groups was that we should publish more correspondence, more timely and pertinent reviews from clinical and basic medical research, and expand our educational activities. This is a lot of work and we will have to think how to spread our human (and part-time!) resources (Fig. 12) to all these tasks. We expect help and support from the Editorial and Advisory Boards (31).

An important step forward in the improvement of the journal was the formation of a group of statistical editors (Fig. 13), who are currently building guidelines to assist authors in adequately presenting their data in submitted manuscripts.

Our web editor (Fig. 14) will also have a lot of work on our web-edition. Respondents' criticism of our website was very constructive and their suggestions innovative. Making a good web edition of a journal is not an easy or cheap job, especially since we have limited finances. However, we will try to introduce improvements to the website as well as prepare the journal in XML format, so that it would be eligible for the *PubMedCentral*, an open database of biomedical journals (32).

We also plan to continue with our educational activities and hope to organize workshop focused on special research fields, such as clinical medicine and public health (see announcement on page 57).

A lot of work! But we are young and strong and ready for hard work. After all, as a journal, we are only ten years old and the formative years are still ahead of us. We expect the next ten years to be exciting and successful. If they turn to be a bit turbulent, it should not be taken too seriously because we will be, after all, teenagers!

References

- Marušić M. The first issue of the Croatian Medical Journal. *Croat Med J* 1992;33:1-2.
- Lacković Z, Markeljević J, Marušić M. Croatian medicine in 1991 war against Croatia: a preliminary report. *Croat Med J* 1992;33 War Suppl 2:110-9.
- Matoš J, Njavro J, Bosanac V, Lacković Z. The deliberate and preconceived destruction of the hospital during the siege of Vukovar. *Croat Med J* 1992;33 War Suppl 2:120-8.
- Horton R. Croatia and Bosnia: the imprints of war – I. Consequences. *Lancet* 2000;353:2139-44.
- Klain E. How I survived Croatian Homeland War [in Croatian]. Zagreb: Croatian Medical Journal; 1996.
- Marušić M. First meeting of the World Association of Croatian Physicians. *Croat Med J* 1992;33:150-2.
- Marušić A, Marušić M. Struggle for visibility. A small journal in a small country. International Network for the Availability of Scientific Publications (INASP) Newsletter 1995;5:8-9
- Marušić A. Scientific editing around the globe: Croatia. *CBE Views* 1998;21:12-3.
- Marušić M, Marušić A. The creation of the Croatian Medical Journal and Croatia's reputation abroad. *Journal of Croatian Studies* 1998;36-37:149-70.
- Lang S. The Third Balkan War: Red Cross bleeding. *Croat Med J* 1993;34:5-20.
- Marušić A, Marušić M, Lang S. White Road for Nova Bila and Silver Bosnia: a chronology of the humanitarian convoy. *Croat Med J* 1994;25:3-7.
- Arcel LT, Folnegović-Šmalc V, Kozarić-Kovačić D, Marušić A. Psycho-social help to war victims: women refugees and their families from Bosnia and Herzegovina and Croatia. Copenhagen: International Rehabilitation Center for Torture Victims; 1995.
- Lang S. A physician and the war. *Croat Med J* 1992;33 War Suppl 2:1-2.
- Gottstein U. International Physicians for the Prevention of Nuclear War (IPPNW) delegate visit to the hospitals in Split, West Mostar and East Mostar, November 29–December 6, 1993. *Croat Med J* 1994;35:55-6.
- Glunčić V, Pulanić D, Prka M, Marušić A, Marušić M. Curricular and extracurricular activities of medical students during war. *Acad Med* 2001;76:82-7.
- MacQueen G, Santa-Barbara J, Neufeld V, Yusuf S, Horton R. Health and peace: time for a new discipline. *Lancet* 2001;357:1460-1.
- Vass A. Peace through health. *BMJ* 2001;323:1020.
- Kovačić L, Šošić Z. Health care reform in Croatia: needs and priorities. *Croat Med J* 1998;39:249-55.
- Ljubić B, Hrbač B. Priority setting and scarce resources: case of the Federation of Bosnia and Herzegovina. *Croat Med J* 1998;39:276-80.
- Marušić A. Peace through public health in southeast Europe? *Lancet* 2002;359:54.
- Lang S. Challenge of goodness: twelve humanitarian proposals based on the experience of 1991-1995 wars in Croatia and Bosnia and Herzegovina. *Croat Med J* 1998;39:72-6.
- Lang S. Challenge of goodness: new humanitarian technology, developed in Croatia and Bosnia and Herzegovina in 1991-1995, and applied and evaluated in Kosovo 1999. *Croat Med J* 1999;40:438-45.
- Mišak A. Citius, altius, fortius in 2001. *Croat Med J* 2001;42:4-6.
- Lacković Z. Who needs Croatian Medical Journal? *Croat Med J* 1992;33:67-77.
- Marušić A, Marušić M. Small scientific journals from small countries: breaking from a vicious circle of inadequacy. *Croat Med J* 1999;40:508-14.
- Roach OJ. Making our voices heard: why student journals are crucial. *Croat Med J* 2001;42:67-8.
- Solter D. Cloning and embryonic stem cells: a new era in human biology and medicine. *Croat Med J* 1999;40:309-18.
- Duraković A. On depleted uranium: Gulf War and Balkan syndrome. *Croat Med J* 2001;42:130-45.
- Marušić A, Meštrović T, Petrovečki M, Marušić M. Peer review in the Croatian Medical Journal from 1992 to 1996. *Croat Med J* 1998;39:3-9.
- Barbour V, Horton R. Mechanisms of disease. *Lancet* 2002;358:2-3
- Marušić M, Martinić Blase E, Marušić A. Croatian Medical Journal at the turn of the millennium. *Croat Med J* 2000;41:5-27.
- Delamonth T. PubMed Central increases its appeal. *BMJ* 2001;322:818.

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