Organization of healthcare about patients with cerebrovascular disease in the Czech Republic

Organizovanje zdravstvene zaštite bolesnika sa cerebrovaskularnom bolesti u Češkoj

Dubravka Jaganjacova*, Petr Hava†, Eva Kalvodova†

*Clinic for Subsequent Care, Medicon Hospitals, Masaryk University, Faculty of Medicine, Brno, Czech Republic, †Charles University in Prague, Department of Public and Social Policy, Prague, Czech Republic

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Introduction

The growing burden of chronic disease of civilization during the 20th century and at the beginning of the 21st century in the context of demographic change, health promotion and treatment, is becoming a dominant agenda of the process of health policy making according to World Health Organization (WHO). Cerebrovascular disease (CVD) is not only the world’s second leading cause of death, but also an important factor causing the reduction of self-sufficiency of chronically ill in both developing and developed countries 1. The first half of the 90s, thanks to the work of the Harvard School of Public Health and its application by the WHO, brought about a new comprehensive framework for the evaluation of morbidity, mortality and also self-sufficiency of chronically ill called “Burden of disease” (or “disease burden”) 2.

The new combination of years of life lost due to premature death and years of life lived in less than full health. CVD represents an illness which leads to an average of 9.3 years lost due to premature death or disability in developed countries 2. In comparison with other diseases, CVD has one of the major socioeconomic and health impacts on society. The concept of the Disease Burden (DALYs) without doubt becomes the basis of the new approach to the formulation of health policy priorities, both in the field of medicine and health promotion 1.

The question is how, in the current practice of the Czech health policy discussions, we manage to orientate the action of risk groups, patients and doctors to the control of risk factors on one hand, and to the treatment of acute stroke and particularly the care about chronically ill patients after acute phase (if the model of care about chronically ill is efficient) on the other one.

International trends in morbidity and mortality from cerebrovascular disease

Research on the incidence, prevalence and mortality of stroke is based on a various data sources (hospital’s patients database, data from the acute care, demographic data on specific mortality, epidemiological studies) 3–11. Opportunities for the comparison of these data are complicated by methodological differences, diversely defined age groups, but also by the uncertainty about the reliability of the diagnosis with the definition of stroke by the WHO 12. The need for the reliability and consistency of methodologies, including age-standardized data, arise especially when we want to observe the long-term developmental changes 7. Current epidemiological values of age-standardized incidence of stroke for people younger than 55 years, range from 4.2 to 11.7 per thousand per year (Figure 1). Actual values show significant differences depending on the observed territorial units. The average age of patients with stroke is about 70 years for men and about 75 years for women. More than half of the cases of stroke occur at the age below 75 years 7.

While in younger age groups we can observe the decline of emergence of CVD, in older age groups there is a stabilization or increase in the incidence. Differences (variation in the incidence, prevalence and mortality) are also ob-
served in accordance to the ethnicity of specific groups, where we can see also the similarities in the policies of prevention, but also in their economic conditions. As the determinants of these differences, we can consider the quality of the acute care and the prevention of risk factors.

Fig. 1 – Standardized specific cerebrovascular disease (CVD) mortality in all age-groups – comparison of the Czech Republic (CR) and EU15 (before accession)

The publications of the Center for Disease Control in the USA are a global perspective on the development of the overall burden of disease of CVD, including the review of the situation on the level of effectiveness of risk factors control. The data (large correlation maps appended with graphs) are available on the WHO site. The values of the years of life lost due to premature death or due to disability (measured by the index DALYs) range in the North America and Western Europe below 5. The values for the Central and Eastern Europe along with the values for the countries of North Africa vary from 5 to 9. The worst situation is in Russia and in some Central Asian states like Kazakhstan (values greater than 15). The values from 10 to 14 are found in Africa and South America, China and India. A global approach to the differences in morbidity and their determinants have become an important stimulus for research and formulation of strategies focused on the solution of these problems. In the context of demographic change in developed countries and under the existing conditions of combined risk factors, we can expect the increase in the number of diseases in the group of CVD.

The EUSI Report (2003) states that the main causes of disability (of DALYs), for men aged 49–69 are tuberculosis (TBC) at the first place with a value of 9.3, then coronary heart disease (CHD) with 7.6 and CVD with 6.7. At the age over 60 years, CVD is the first cause (13.8), at the second place is CHD with 11.7 and at the third place is chronic obstructive pulmonary disease (CHOPD) with 9.6.

For women, stroke is the main cause of DALYs in both age groups: age 49–69 years: 1. CVD (8.7), 2. TBC (5.6), 3. CHD (4.7); age over 60 years: 1. CVD (16.5), 2. CHD (11.6), 3. CHOPD (8.1).

Taking into account the available data, partial studies and review articles, it is clear that the importance of the epidemiology of stroke was more underestimated in the past in comparison with controlled clinical experiments. Disparities in the methodological approaches lead to the need for greater attention to this issue within the neurological community. An example of this approach is the publication of Feigin and Bennett in 2007.

Mortality and morbidity from cerebrovascular disease in the Czech Republic

In the Czech Republic (CR) the accurate epidemiological data on stroke are missing. The value of mortality on stroke in the population aged under 65 years doubled in comparison with the countries of Western and Northern Europe, with a maximum values for men in the category of 45–65 years (National Cerebrovascular Program). In the upcoming decades the increase in the incidence of stroke is expected, due to the increase of the percentage of elderly population (in Europe it is expected that the elderly would represent about 30% of the population). But the charts of the development of specific stroke mortality in the CR in comparison with EU15 shows that the trend of future development is promising. The CR has the opportunity to reach the level of developed European countries in 2015 (Figure 2).

Fig. 2 – Standardized specific cerebrovascular disease (CVD) mortality in the age-group 0–64 years – comparison of the Czech Republic (CR) and EU15 (before accession)

The development of standardized mortality of cerebrovascular and coronary heart disease in the CR during the 90s was favorable in both the age group from 0 to 64 years, and in all age groups with the exception of the standardized mortality rate for cerebrovascular disease in all age groups in 2000–2005, when there was a significant decrease in the sus-
pension of the decline of mortality and thereby a “delay” in the process of achieving the EU15 level. A vulnerable group includes in this case patients older than 64 years. The question is what factors participate in this problematic difference in mortality in the CR in comparison with developed EU countries.

Strategy for prevention and treatment of stroke

Strategy for prevention and treatment of CVD is discussed internationally within several scientific disciplines, which are primarily focused on different subjects. Medical disciplines such as neurology and cardiology and the corresponding professional society in the US, Europe or in CR formulated in the last 20 years a number of recommendations (guidelines) to which are subsequently incorporated new research findings. In the US the synthesis of recommended procedures for treatment and prevention of stroke is available freely on the Internet. Since the early 90’s some parts of these recommendations have been published in Stroke journal. It is a joint production of professional cardiological society (American Heart Association – AHA) and professional society for stroke (American Stroke Association – ASA). The volume of financial resources in this area clearly exceeds the resources spent in Europe and that is what also determines the difference in the production of new findings. In the US, the tradition of research on health services is more open than for example in the CR and the results are commonly used for further upgrade of health care provision.

The European strategy of CVD treatment has been the subject of quite intensive professional discourse since the early 90’s, which has been repeatedly summarized. Relatively detailed informations about this development are regularly published in the journal Cerebrovascular Diseases. Helsingborg declarations arose on the basis of consensus, roofed by the WHO. The Declaration of 2006 is divided into five main areas (organization of care for patients with stroke, acute care management, prevention, rehabilitation after stroke, evaluation of achievements and quality). Helsingborg declaration of 2006 sets out the objectives for Europe till 2015. These goals apply to all patients after CVD. However this declaration does not contain direct links to the publications in professional journals and books so the targets rather show the direction of useful action. The representatives of patients were also involved in the process of creation of the declaration. Taking into account the need of multidisciplinary approach, the “roof making strategy” of the WHO creates an important opportunity for mutual meetings of both the representatives of the medical disciplines and of public health and health promotion. From the formulations in the Helsingborg Declaration it is clear that there exists an opportunity for cooperation of multiple disciplines, the cooperation that may lead to a significant reduction in burden of CVD.

In Europe, more detailed information how to deal with stroke are the subject of Guidelines for Management of Ischaemic Stroke and Transient Ischaemic Attack. This document was formulated by the European Stroke Initiative. We can compare this activity to the American AHA and ASA. The European recommendations for the treatment of stroke are formulated on 80 pages and accompanied by a list of about 400 scientific references. In this respect it is comparable to the production in the US, but it is clear that in the US the relevant documents are not only larger and more numerous, but also supported by more detailed arguments. It is interesting that in the document of the European Stroke Strategies (ESO) 2009 there is the intention of harmonization of the treatment and prevention of CVD recommendations of the WHO, ESO and national institutions is declared.

Compared with the two above-mentioned approaches, the situation in the CR is more modest. On the site of the Cerebrovascular Section of the Neurological Society of JEP (Czech Medical Society of Jan Evangelista Purkyně) the National Cerebrovascular Program is available, which is not, however, defined in terms of time. We can only expect that it was created in 2003, because it refers to the Helsingborg Declaration of 1995 and there are no references to the European Stroke Initiative in 2008. This document does not contain links to literature and its attachments are not accessible for the public user. There is no indication if the presented data are age-standardized or not so the validity of the eventual international comparison is doubtful.

Professional discourse concludes that in this area there are relatively adequate knowledge resources, including the availability of required data. The problem and challenge is still a difference in the level of quality, organization and accessibility of health services, or activities in health promotion (according to the MONIKA research, the CR does not manage to control the risk factors, which could be seen as a deficit and a challenge).

A key task of the future strategy for Europe is to resolve how we could reduce the health gaps between countries. Patients with stroke should be treated in specialized centers with stroke units (Stroke Unit Trialists Collaboration, 1997). Minimum requirements of such centers include continuous availability of CT (X-ray computed tomography), the presence of neurologists and other physicians able to treat these patients, the presence of professional staff and adherence to guidelines for providing care and treatment. Centers and units for such patients are not the only prerequisite for the treatment of patients with stroke. The optimal functioning of the whole system is possible only on the basis of available, well-established and functioning network, which would send patients to subsequent specialized centers and rehabilitative facilities. The collaboration with general practitioners in the fields of primary and secondary prevention is an apparent condition. If the care should be optimal, it is absolutely essential that all the patients with stroke are immediately transported to hospital which can provide adequate care. The patients benefit most from the care on stroke units. Patients in critical condition must be placed onto the resuscitation unit (European Ad Hoc Consensus Group, 1997). The recommendations of the Stroke Council of the American Heart Association and the European Ad Hoc Group Consensus imply that in the acute phase of stroke, it is necessary to sort patients according to their clinical condition.

Situation in the Czech Republic, the existing problems in organization in stroke care

Organization of care for patients with cerebrovascular diseases regulated Bulletin No. 2/2010 of the Ministry of Health of the Czech Republic. The Bulletin provides material, technical and staffing complex of cerebrovascular stroke centers and centers that make network of devices that are able to provide acute and follow-up care to patients with cerebral vascular events. The reason for the existence of a network of healthcare facilities – complex cerebrovascular centers (KCC) and stroke centers (IC) is that from January 1, 2011 it is a necessity that all patients with acute stroke are transported to the nearest medical facility (IC KCC), which meets the personal and material conditions for the provision of acute and subsequent treatment. The network is designed on the principle of availability of acute recanalized therapy (systemic thrombolyis or endovascular therapy) within the IC or the KCC indicated for each patient with stroke. According to the experts, only the strict centralization of acute care with a concentration of trained personnel and material conditions will achieve an increase in percentage of patients treated with systemic intravenous thrombolyis in the acute stage of cerebral infarction. In 2007, in the Czech Republic, only 4.3% of all patients with ischemic stroke were treated.22

For the survey of care organization, we chose the case method in which we created and used questionnaires for the patients. At the beginning of the questionnaire the informed consent was included of the interviewed citizen. The first part of the questionnaire consists of basic information about the person, education, work activities, social and economic determinants of health. The second part contains personal and family risk factors involved in stroke disease. The third part relates to lifestyle and diet before the onset of the disease. The fourth part contains questions about the course of the disease, immediate treatment, postacute treatment, rehabilitation and other outpatient treatment. The fifth part of the questionnaire contains the questions of related to the patient’s health condition at present, including mental health, satisfaction with life, assessing the degree of addiction, lifestyle and diet. At the end there is an open question, which constitutes the patient to express his feelings, comments, etc., which could not be divulged in the questionnaire questions. Comments, suggestions and feelings to communicate both by the patients and relatives, who were with a patient at home care and home health care nurse who regularly visits the patient and long-term home.

The patients are selected from a database Rehabilitation Institute, praise, Prague, which is focused on patients after stroke. The patients are moved to Rehabilitation Centre (RS) for acute beds after the first attack of stroke, or from home to after-care and rehabilitation (rehab) which is already at a later stage. In this way we can gain valuable information about the following services: information about the chain postacute care-home care, secondary prevention (general practitioner, specialist). During patient’s stay in the RS we can detect contrast and continuity of care-postacute-acute care, including widespread and specialized rehabilitation for patients after stroke.

Conclusion

The treatment of acute stroke in the Czech Republic may be on a bed of internal or neurological department. This selection is determined by general medical conditions. The network of stroke centers should be easily accessible to every patient. Timely transfer of patients to the intensive rehabilitation is limited by the capacity and their health condition. Intensive rehabilitation homes are often not able to take care of more severely disabled patients (insufficient number of nursing staff and failure to adapt the rehabilitation program for elderly or severely disabled patients). Acute and individual medicine in the Czech Republic is currently at the same level as in EU countries. Preventive and risk factors of control are not satisfactory. There are several reasons. Organization and coordination of services: primary care – acute medicine – secondary care, do not usually work. The population is not sufficiently informed about the importance of prevention and control of risk factors. All these factors increase the incidence of stroke. Sufficient long-term care and rehabilitation, as well as well-coordinated secondary prevention are often after hospitalization for acute bed. Prevention and control of the determinants of health requires greater cooperation and stronger social relations to economic and social factors of the disease. These parameters indicate that social cooperation in public and social policy is necessary for effective results.

REFERENCES


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