

USE OF ELECTROCONVULSIVE THERAPY IN CENTRAL-EASTERN EUROPEAN COUNTRIES: AN OVERVIEW

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received: 11.10.2016;

revised: 12.4.2017;

accepted: 3.5.2017

SUMMARY

Though a number of reports on the use of electroconvulsive therapy (ECT) has been published from the Central-Eastern European region over the past two decades, a systematic review of this literature has not been published. Thus the aim of this paper was to review recent trends in ECT practice in Central-Eastern Europe. Systematic literature search was undertaken using the Medline, PSYCHINFO and EMBASE databases covering the period between January 2000 and December 2013. Relevant publications were found from the following countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Serbia, Slovakia, Ukraine, but none from Albania and Moldova. ECT practice in the region shows a heterogeneous picture in terms of utilization rate, main indications, and the technical parameters of application. On one end of the spectrum is Slovakia where the majority of psychiatric facilities offer ECT, on the other end is Slovenia, where ECT is banned. In about half of the countries schizophrenia is the main indication for ECT. In Ukraine, unmodified ECT is still in use. Clinical training is generally lacking in the region and only 3 countries have a national ECT protocol. Possible ways of improving ECT practice in the region are briefly discussed.

Key words: ECT - Central-Eastern Europe - affective disorders – schizophrenia - training

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INTRODUCTION

Convulsive therapy for the treatment of severe psychiatric disorders has been introduced in psychiatry in Central-Eastern Europe, namely in Budapest, Hungary in 1934 (Meduna 1935). In the subsequent years, the new method has rapidly spread in Europe and the United States and later all over the world (Fink 2001). As chemical seizure induction was unpredictable and anxiety-provoking, a new method, electric seizure induction, was pioneered in Rome in 1938 (Bini 1938).

While the exact date and place of the use of first convulsive therapy in different Central-Eastern European countries cannot be traced, the first scientific reports apart from Meduna's contributions (Meduna 1937) were published from this region in the early 1940s (Matulay & Skotnický 1941, Vaičiūnas 1943). The wider use of convulsive therapies in Europe was hindered by World War II (WWII).

In the years following WWII, the political and ideological climate had a decisive impact on psychiatry in general and convulsive therapy in particular in communist Central-Eastern Europe. In 1952, a clearly politically-driven directive was issued in the Soviet

Union to “immediately restrict indications” of convulsive therapy, because of its Western origin, essentially banning ECT for more than a decade there (Nelson & Giagou 2009). This directive might have influenced national ECT practices in some, but not all communist countries; the use of ECT actually increased in Hungary during the 1950s (Gazdag et al. 2007).

Throughout the period of the Cold War (1950-1989), access to scientific information from the Western world was severely restricted in Central-Eastern Europe. In the second half of the 1980s, the communist regimes entered a deep economic and political crisis that eventually resulted in the dissolution of the Soviet Union-backed political systems in Central-Eastern Europe by the early 1990s. Over the past 25 years access to new scientific information and participation in scientific events organized all over the world has become much easier for the Central-Eastern European professional community, although economical hindrances still exist.

Though increasing number of reports on the use of ECT were published from this region in the 2000s, Central-Eastern Europe was overlooked in a recently published monograph (Swartz 2009), and only a small segment of this literature was included in a recent

exhaustive worldwide overview of ECT practice (Leiknes et al. 2012). Thus, the aim of this paper was to review recent trends in ECT practice in Central-Eastern Europe.

METHODS

A systematic literature search was undertaken including the Medline, PSYCHINFO and EMBASE databases covering the period between January 2000 and December 2013. Search terms entered included “electroconvulsive therapy,” “ECT,” combined with all of the following: “use,” “utilization,” “practice,” “survey,” and any of the names of countries in Central-Eastern Europe. Relevant references known to the authors of this review or reference lists in retrieved papers were also included. Publications in any languages were considered.

RESULTS

Relevant publications were found from the following countries: Bulgaria (Hranov et al. 2012), Croatia (Kuzman et al. 2014), Czech Republic (Köhler 2012), Estonia, Latvia, Lithuania (Lõökene et al. 2014), Hungary (Gazdag et al. 2004a,b, Gazdag et al. 2013), Poland (Palinska et al. 2008, Gazdag et al. 2009), Romania (Gazdag et al. 2011), Serbia (Spiric et al. 2014), Slovakia (Dragasek 2012), Ukraine (Olekseev et al. 2014), but none from Albania or Moldova.

The number of ECT centers and rates of ECT-treated patients and the number of psychiatric facilities are presented in Table 1. The most important technical data of ECT administration are summarized in Table 2.

Table 1. Number of ECT centers and rate of ECT-treated inpatients against the background of the number of psychiatric facilities and the whole population

	Population	No. psychiatric facilities*	No. ECT centers	Rate of ECT treated patients (per 10.000 population)
Hungary (2002)	10.0 million	76	34 (44.7%)	0.31
Poland (2005)	38.6 million	58	25 (43.1%)	0.11
Slovakia (2008-10)	5.4 million	36	33 (91.6%)	2.92
Czech Republic (2010-11)	10.5 million	42	28 (66.7%)	1.36
Bulgaria (2010)	7.3 million	33	4 (12.1%)	0.16
Estonia (2010)	1.3 million	11	5 (45.4%)	2.78
Latvia (2010)	2.0 million	6	2 (33.3%)	0.05
Lithuania (2010)	3.2 million	10	5 (50%)	0.38
Ukraine (2011)	45.5 million	146	8 (5.5%)	0.02
Serbia (2012)	7.2 million	46	1 (2.2%)	0.08
Croatia (2012-13)	4.3 million	29	3 (10.3%)	0.13

* Psychiatric facilities include all public and private hospitals as well as academic centers that provide acute psychiatric service

Table 2. The most important technical parameters of ECT practice in Central-Eastern Europe

	Rate of centers using square wave machines	Most common electrode position	Main indication of ECT	Rate of centers offering cECT or mECT	National protocol exist
Hungary (2002)	48%	bifrontal bifronto-temporal	schizophrenia	0%	yes
Poland (2005)	70%	bitemporal	affective disorders	25%	no
Slovakia (2008-10)	50%	bitemporal bifronto-temporal	affective disorders	6.3%	no
Czech Republic (2010-11)	100%	bifronto-temporal bifrontal	schizophrenia	12%	yes
Bulgaria (2010)	75%	bifrontal bitemporal	affective disorders	50%	no
Estonia (2010)	100%	bitemporal right unilateral	schizophrenia	80%	no
Latvia (2010)	0%	no information	catatonia	0%	yes
Lithuania (2010)	75%	bitemporal	schizophrenia	0%	no
Ukraine (2011)	60%	bitemporal unilateral	affective disorders	40%	no
Serbia (2012)	100%	bifrontal	affective disorders	100%	no
Croatia (2012-13)	100%	bifrontal	schizophrenia	33%	no

cECT=continuation electroconvulsive therapy; mECT= maintenance electroconvulsive therapy

DISCUSSION

ECT practice of the Central-Eastern European countries is heterogeneous in terms of utilization rate, main indications, and the technical parameters of application. On one end of the spectrum are Slovakia and the Czech Republic where the majority of the psychiatric facilities offer ECT (92 and 67%, respectively) for a significant number of patients (2.92 and 1.36 per 10,000 population, respectively). Also a high rate of patients (>2/10,000 population) are treated with ECT in Estonia, but in a somewhat more centralized form, as only less than 50% of the psychiatric facilities provide ECT. The advantage of this centralization is that all centers use modern, square-wave machines and experienced teams are administering ECT. Similarly high utilization rates are characteristic for some Western-European (e.g. Belgium (Sienaert et al. 2006), the UK (Benbow & Bolwig 2009) and Scandinavian countries (Benbow & Bolwig 2009). Medium utilization rates of ECT are characteristic of Hungary and Lithuania with figures between 2 and 0.2 per 10,000 population, respectively and with 50% of psychiatric facilities offering ECT. Similar figures were reported from Spain (Bertolin-Guillen et al. 2006). The rate of ECT treated patients remains below 0.2/10,000 population in the rest of the region. This extremely low utilization rate found in the central and eastern part of Europe, is not exceptional in other parts of the world, for instance in Hong-Kong (Chung 2003).

Poland has relatively high number of ECT centers (43%), but the rate of facilities providing ECT is low in all other countries. In Ukraine, Croatia, and Serbia, both the rate of treated patients and that of the ECT centers are so low that access to ECT is problematic both from clinical and ethical viewpoints. The other end of the spectrum is occupied by Slovenia, the only country in the region where ECT has been banned since 1994 (Eranti & McLoughlin 2003). Slovenian patients who need ECT are transferred to the neighboring countries for ECT (Oral et al. 2008).

Bilateral, usually bifrontal or bifrontotemporal, electrode position is still characteristic in the Central-Eastern European region. Unilateral position as a second option is mentioned only in Estonia and Ukraine (Lõokene et al. 2014, Olekseev et al. 2014).

The clinical indications for ECT also show a heterogeneous picture. In nearly half of the countries, schizophrenia remains the main indication while affective disorders predominate in the other half (Table 2). No correlation appeared between the frequency of use and indications. For example, Estonia has a high utilization rate and schizophrenia as a first indication, while in Ukraine and Serbia affective disorders are the first indication but the utilization rates are very low. Lack of comprehensive national guidelines and training could be the main reasons for these practices.

The lack of centrally organized ECT training or courses are shared characteristic of all countries in the region. Teaching the theoretical basis of ECT is not part of the regular medical curricula, except for Croatia and Ukraine, while practical experience is not provided in any country. The theoretical principles of ECT are taught in every residency programs of the region, but without supervised practical sessions. A frequently used way of distributing knowledge on ECT is via CME courses, for instance in Hungary and Serbia. In a significant number of countries like Bulgaria, Hungary, Poland, Serbia, Ukraine, textbooks or chapters on ECT in monographs have been published in local languages in the last decades (Merdzhanov 1985, Bánki 2009, Krzyżanowski 1991, Maric and Jasovic-Gasic 2010, Maruta et al. 2012).

Several difficulties hindering wider ECT use have been reported in the literature. Most frequently mentioned problems include the lack of anesthesiologists and the necessary technical equipments. This factor might have contributed to the use of unmodified ECT in Ukraine (Olekseev et al. 2014), while this long outdated practice was not reported from any other country of the region. Lack of separate financing for ECT services was also mentioned as a reason for low utilization in some publications (Hranov et al. 2012, Gazdag et al. 2012). Differences in financing might also be responsible for the extreme (minimum 50-fold) difference detected between rates of ECT use in public hospitals and the only private hospital in Ukraine (Olekseev et al. 2014).

While in a worldwide review (Leiknes et al. 2012) professional attitudes towards ECT was reported to be generally favorable, this is generally not true for the Central-Eastern European countries. In comparison with the results of attitude surveys in the literature, significantly less favorable attitudes were detected in a Hungarian survey (Gazdag et al. 2004b) and the results were even worse in a Romania (Gazdag et al. 2011). Although no structured large-scale public attitude survey have been published, some papers (Hranov et al. 2012, Spiric et al. 2014) listed unfavorable public attitudes among the reasons for low utilization rates.

The trend of ECT use in Central-Eastern European countries is varied. In some countries ECT use is still increasing, e.g. in Poland and Lithuania. In Poland the number of centers providing maintenance ECT is also increased. For some countries a high and steady use is characteristic. Slovakia and Estonia are two typical examples. Low and stagnant state use is characteristic of Bulgaria, Serbia and Croatia. A decreasing tendency of ECT use is observed in Hungary and Latvia.

CONCLUSIONS

There are several aspects of ECT practice in the region that should be improved. The most urgent task is the elimination of unmodified ECT, followed by the publication of national protocols in each country.

Teaching ECT in medical curricula and provision of supervised clinical practice in residency training are also important targets for improving ECT practice. The quality of ECT provision could be improved with the development of treatment standards that would form a complete accreditation system for the whole region like the ECT Accreditation Service (ECTAS) within the Royal College of Psychiatrists (Benbow & Bolwig 2009). These steps may enhance the quality of ECT practice leading to a more positive attitude towards ECT in both the professional and the lay community.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:

Gábor Gazdag & Gabor S. Ungvari: designed the study;

Gábor Gazdag & Rozália Takács: performed the literature search;

Gábor Gazdag, Jozef Dragasek, Margus Löökene, Tomasz Sobow, Aleksey Olekseev & Gabor S. Ungvari: participated in the analysis and interpretation of the data;

Rozália Takács: prepared the first draft of the manuscript.

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