Dementia Diagnosis and Treatment in Czech Neurological and Psychiatric Practices

Diagnostika a léčba demence českými neurology a psychiatry

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Abstract

The aim of the study: The aim of this study was to obtain comprehensive information about standard practice in management of dementia among specialists responsible for the care of patients with cognitive deterioration in the Czech Republic. *Methods:* The data were collected by the means of structured questionnaires completed by neurologists, psychiatrists and geriatricians during seminars focused on cognitive topics. *Results:* 152 specialists were participating in the study. The respondents saw the mean of 27 patients with cognitive deficit monthly, 33% of whom suffer from Alzheimer disease. Neurologists diagnosed equal proportions of patients with mild cognitive impairment, and with mild to moderate stages of dementia; psychiatrists and geriatricians mostly diagnose patients at the moderate stage of the disease. Nearly all of the neurologists and half of the psychiatrists examined their patients by MRI or CT prior to starting therapy. SPECT was mainly used by neurologists (42%). The majority of patients took cholinesterase inhibitor (ChEI) for 2–3 years. Half of the specialists occasionally used dual therapy with ChEI and memantine. Nootropics were administered more frequently by psychiatrists. All the respondents prescribed an Selective Serotonin Reuptake Inhibitors (SSRI) for the therapy of coinciding depression. *Conclusion:* Dementia was managed by the majority of specialists according to the EFNS guidelines. The early stages of the disease were mostly handled by neurologists, who also tend to employ more sophisticated diagnostic tools in differential diagnosis of dementia.

Souhrn

Úvod: Cílem studie bylo získat komplexní informace o běžné praxi v diagnostice a terapii demencí od specialistů, kteří se zabývají péčí o pacienty s kognitivní deteriorací v České republice. *Metodika:* Pro realizaci výzkumu byla použita metoda písemného dotazování formou strukturovaného dotazníku, který vyplňovali neurologové, psychiatři a geriatři během seminářů s kognitivní tematikou. *Výsledky:* Studie se účastnilo 152 specialistů z celé ČR. Dotazovaní specialisté vyšetří průměrně 28 pacientů s kognitivním deficitem za měsíc, z nichž 33 % trpí Alzheimerovou nemocí. Neurologové diagnostikují v rámci prvního vyšetření v poměrně vyrovnaném počtu pacienty s MCI, s lehkou a středně těžkou demencí, zatímco k psychiatrům a geriatrům přichází většina pacientů již se středně těžkou a pokročilejší demencí. Téměř všichni neurologové a polovina psychiatrů odesílají pacienty před zahájením léčby na MR či CT mozku. SPECT mozku je využíván především neurology (42 %). Většina pacientů užívá inhibitory acetylcholinesterázy (iAChE) po dobu 2–3 let. Polovina dotázaných nasazuje v indikovaných případech duální terapii iAChE a memantinem. Nootropika předepisují nejčastěji psychiatři. Všichni respondéři léčí současně probíhající depresi selektivními inhibitory zpětného vychytávání serotoninu (SSRI). *Závěr:* Většina specialistů zabývající se u nás problematikou demencí diagnostikuje a léčí pacienty ve shodě s EFNS a českými doporučeními. Časná stadia demence řeší v ČR především neurologové, kteří také využívají komplexnější paraklinická vyšetření v diferenciální diagnostice.

Key words

Alzheimer's disease – dementia – management – cholinesterase inhibitors – Czech Republic

Klíčová slova

Alzheimerova nemoc – demence – management – inhibitory acetylcholinesterázy – Česká republika

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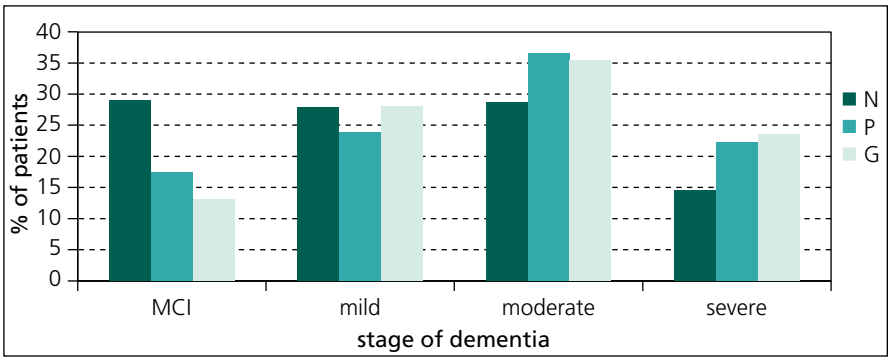
Introduction

As is apparent from several comparative studies across Europe, there is no consensus in the use of assessment tools for dementia in Alzheimer's centres in Europe [1]. There are variable culture-dependent barriers to the diagnosis and treatment for patients with dementia in Europe [2]. These differences might be partly associated with variations between the countries in insurance companies' rules for reimbursement of cholinesterase inhibitors (ChEIs) [3]. The aim of our study was to explore attitudes and common practices in the Czech Republic, to explore which specialists primarily deal with patients with cognitive deterioration and to obtain general information about the diagnostic tools and treatments applied in dementia patients. We compared the results with the recommendations of the European and Czech guidelines for the management of dementia [4–6].

Methods

The data were collected from structured anonymous questionnaires administered during educational seminars focused on cognitive topics from March to October 2008. The participants were neurologists, psychiatrists, and geriatricians interested in cognitive impairment and dementia. The questionnaire consisted of 41 questions concerning the dementia subtypes, the number of patients with cognitive deficit seen by each specialist per month, the methods routinely used for the diagnosis and general knowledge about and utilization of specialized investigations in specific cases. The second part of the questionnaire addressed the therapy: what types of medicinal products are administered at what point in the course of the disease. The questions were designed in such a manner that the respondent could answer freely, estimating numbers, percentage proportion, and representation, or naming the concrete remedies or procedures. Examples of questions: *Estimate how many patients with cognitive deficit you see in your practice monthly. Estimate what percentage of your patients comes to you with MCI, or in the mild, moderate, or severe stage of dementia. Which cognitive scales do you use for diagnosing cognitive deficit/dementia? Which treatments do you use most frequently in the therapy of behavioural disorders in dementia patients?*



Graph 1. The percentage distribution of dementia stage when first seen by the specialist. N – Neurologists, P – Psychiatrists, G – Geriatricians

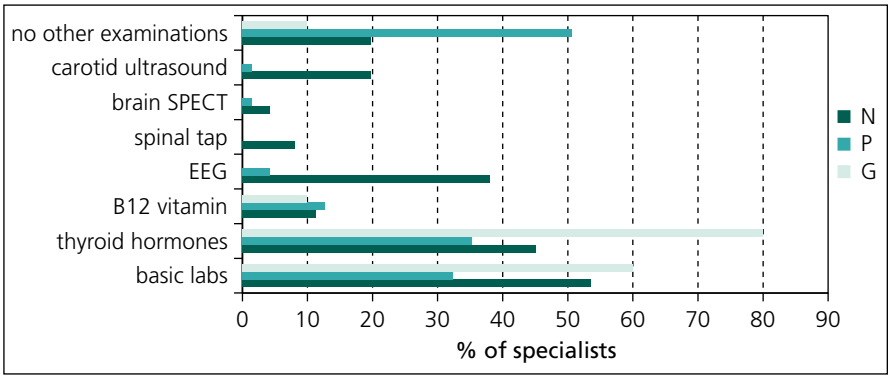
The data were transferred into an electronic form, and the frequency of respective answers was statistically processed into a percentage distribution or means with standard deviations.

Results

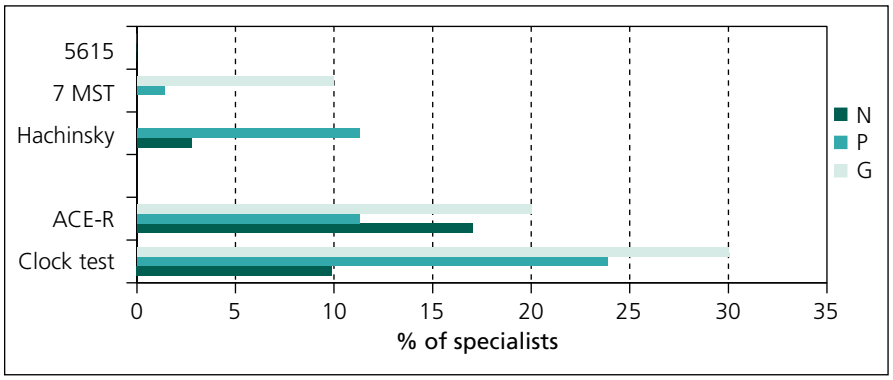
A total of 152 physicians with a special interest in cognitive impairment and dementia participated in the study. Participants were: 71 neurologists (N), 71 psychiatrists (P), and 10 geriatricians (G). Since only a few geriatricians participated, the G responses are just touched upon in the Results section, while the N and P responses are discussed in more detail. The participating physicians see a monthly average of 27 ±24 patients with cognitive deficit. N see 21 ±14 and P 33 ±30 patients. The number of dementia patients seen by P dependents on the duration of specialized education. The P residents with less than 6 years of education see 12 ±9 patients per month; while P with completed psychiatry degrees see 43 ±32 patients per month. The number of patients seen by N is independent of the duration of neurology education. All of the specialists described the spectrum of their dementia patients equally – on average, the patients they see are distributed as: 33% Alzheimer's disease (AD), 26% vascular dementia, 26% mixed dementia, 6% Parkinson's disease dementia or Lewy body dementia, 3% frontotemporal type of dementia, and 6% other types of dementia. About half of the patients seek the specialist directly, and the majority of the remaining patients are referred to the specialist by a general practitioner. 52% of N and 21% of P cooperate with specialized cognitive centres, mostly for diagnostic purposes. There are 15 such centres in the Czech Republic. 19% of N and 11% of P prefer their patients to be followed by these centres after the diagnosis had been made. The respondents cited financial matters, such as prescription limits, the availability of higher quality care, such as sophisticated diagnostic tools, and a more experienced approach as the main reasons for collaborating with these centres.

Diagnostics

79% of P and 84% of N regularly diagnose mild cognitive impairment (MCI).



Graph 2. Other examinations used routinely in the diagnostics of dementia.



Graph 3. Cognitive scales most frequently used for specifying the cognitive deficit.
7MST – 7-Minute Neurocognitive Screening Battery [8], ACE-R – Adenbrooke's Cognitive Examination revised version [9], MMSE – Mini-Mental State Examination, Hachinski ischemic score [10]

N diagnose an equal number of patients with MCI (29%), mild dementia (28%), and moderate dementia (29%), while the majority of patients seen by P and G are in the moderate stage at the first examination (P – mild 24%, moderate 37%, severe 22%; G – mild 28%, moderate 36%, severe 24%). The exact distribution of the dementia stages when first examined by the specialists is demonstrated in Graph 1.

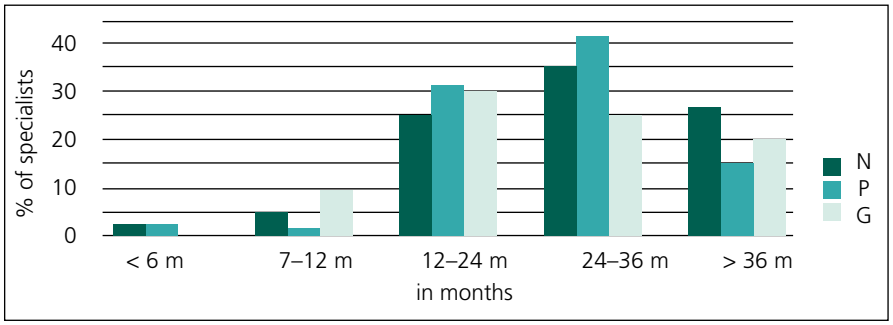
83% of N perform brain imaging (CT or MRI) in all patients prior to starting a therapy; 22% of P do so. On average, 94% of N patients and 48% of P patients have some imaging investigation done in order to complete the diagnosis. 42% of N currently use SPECT examination; 24% of P reported experience with this examination when diagnosing dementia. The summary of diagnostic investigations routinely used in patients with cognitive complaints is shown in Graph 2.

N send an average of 54% of their patients for a psychological investigation in order to more closely narrow the diagnosis; P use psychological investigation for an average of 43% of their patients. Mini-Mental State Examination (MMSE) [7] is used by all the responders for diagnostic and follow-up purposes. Other generally applied tests for detecting cognitive deficit are summarized in Graph 3.

Therapy

All the specialists use ChEIs for the treatment of AD. Most of the patients take this therapy for 1–3 years (Graph 4). More than half of all the responders, regardless of their specialization, treat their patients with dual therapy (ChEI + memantine) in indicated cases. Ginkgo preparations are preferred as an occasional or even frequent therapy by 75% of P and 48% of N. Nootropics are the most popular with P, 75% of whom use them often or occasionally in the treatment of dementia; 42% of N use nootropics with this frequency.

91% of N and all P prescribe selective serotonin reuptake inhibitors (SSRI) for the treatment of coinciding depression. All of the P respondents also treat related behavioural disorders; 40% of N administer antipsychotic medications themselves. An overview of the preferred remedies in the treatment of psychiatric complications of dementia is presented in Graphs 5 and 6.



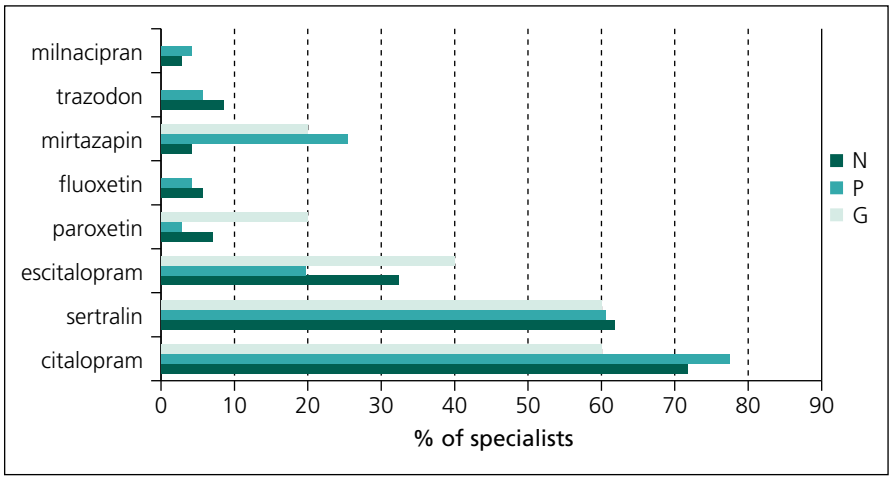
Graph 4.The average time period of iAChE administration to dementia patients.

Discussion

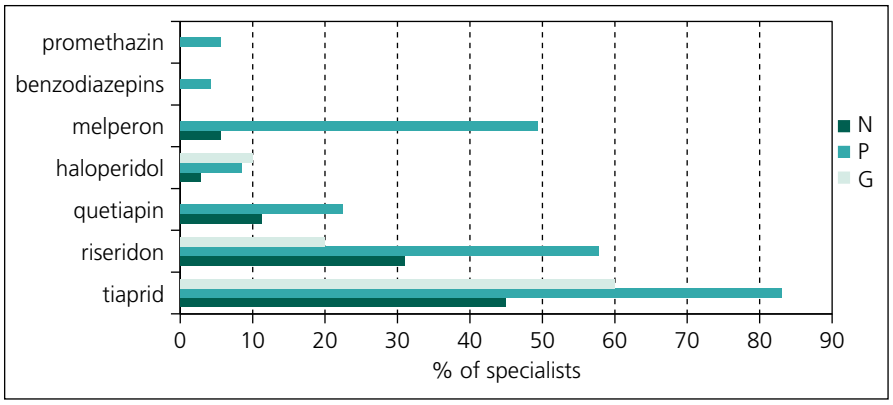
Approximately 10.5 million people live in the Czech Republic. There are 31 000 medical doctors (excluding dentists), 900 of whom specialize in neurology, 950 in psychiatry, and 200 in geriatrics. Expressed by ratio, there are 11,400 people per 1 N, 10,800 people per 1 P, and 51,500 people per G. These numbers are comparable to other central European and some eastern European countries [11]. The specialists who participated in our study represent 8% of N, 7% of P, and 5% of G.

The participating specialists were randomly offered the opportunity to attend cognitive seminars held throughout the Czech Republic. N and P were equally present; only a few G attended the seminars. The data collected from this sample of specialists indicate that N usually encounter earlier stages of dementia than the other specialists, and that they see an equal distribution of MCI, mild dementia, and moderate dementia (30% each), while the majority of patients coming to the P and G for the first time are already in a moderate stage of the disease. The MMSE is used routinely in all the patients to detect and monitor cognitive deficit, mainly because insurance companies require this test to support a ChEI prescription. N employ brain imaging methods in order to diagnose the majority of their patients; half of the patients seen by P have brain CT or MRI done. N use SPECT examination more frequently.

In the Czech Republic, cerebrospinal fluid (CSF) analysis is not a routine procedure in dementia assessment; only 10% of the respondents admitted to performing spinal taps occasionally in patients with a cognitive deficit. In this context, our structured questionnaire did not specifically investigate the use of CSF biomarkers for AD or Creutzfeldt-Jacob disease (CJD). We have merely explored whether the specialists perform spinal taps routinely for diagnostic purposes. We can comment on this topic at least from our own experience and knowledge. The examination of protein 14-3-3 is used quite commonly in the differential diagnosis of dementia to verify CJD suspicion and is generally covered by health insurance in the Czech Republic. There



Graph 5. Commonly used treatments for depression.



Graph 6. Commonly used treatments for psychiatric complications.

are four laboratories measuring tau, phosphorylated tau and beta-amyloid to support AD diagnosis. The main obstacle for this examination to be freely available is the lack of reimbursement by health insurance providers. Therefore, it is used primarily for research purposes and marginally for clinical purposes [12]. An additional major issue is the interpretation of CSF results, since the reported cut-offs for CSF total tau and beta-amyloid measured by the ELISA sets from the same manufacturer differ among various laboratories within our country as well as throughout Europe [12].

The majority of patients take ChEI for 2–3 years, and 50% of the specialists use a dual therapy of ChEI and memantine in specific cases. The Czech guidelines, in accordance with the European guidelines, recommend using memantine in monotherapy or in combined therapy in moderate and severe stages of Alzheimer's disease; the dual therapy is reimbursed in patients with MMSE scores in the 13–17 range.

Interestingly, the use of nootropics is relatively high, especially among P. This might be partially due to constraints associated with the choice of a therapeutic approach in patients with MMSE scores above 20; most of the specialists (93% of N, 98% of P) indicated that these patients should be treated with ChEI, whereas insurance companies do not reimburse the therapy. During the course of this study, insurance covered ChEI therapy in the Czech Republic in patients with MMSE scores of 13–20 only. This was in contrast with other European countries where the upper limit for ChEI reimbursement is set to the MMSE score of 24 points [3]. Recently, the policy for ChEI reimbursement has changed and, as of April 2010, the therapy is covered in patients with the MMSE score of 13–25.

Conclusion

According to our observation, many of the specialists do not diagnose and treat their patients according to the European and Czech guidelines [4,5]; especially P do not seem to exactly follow the guidelines. Therefore, this study identified a need for better information and education directed towards specialists dealing with dementia.

However, we can also conclude that, consequent to the development of more sophisticated diagnostic tools and the growing knowledge about underlying histopathological mechanisms of dementia, this field of interest is gradually moving from psychiatry to neurology. This is in accordance with the review of dementia management in Europe, recommending that the role of neurologists in dementia management should be clarified [13].

References

1. Paulino Ramirez Diaz S, Gil Gregório P, Manuel Ribera Casado J, Reynish E, Jean Ousset P, Vellas B et al. The need for a consensus in the use of assessment tools for Alzheimer's disease: the Feasibility Study (assessment tools for dementia in Alzheimer Centres across Europe), a European Alzheimer's D isease Consortium (EADC) survey. Int J Geriatr Psychiatry 2005; 20(8): 744–748.
2. Waldemar G, Phung KT, Burns A, Georges J, Hansen FR, Illife S et al. Access to diagnostic evaluation and treatment for dementia in Europe. Int J Geriatr Psychiatry 2007; 22(1): 47–54.
3. Oude Voshaar RC, Burns A, Olde Rikkert MG. Alarming arbitrariness in EU prescription and reimbursement criteria for anti-dementia drugs. Int J Geriatr Psychiatry 2006; 21(1): 29–31.
4. Hort J, O'Brien JT, Gainotti G, Pirttila T, Popescu BO, Rektorova et al. EFNS guidelines for the diagnosis and management of Alzheimer's disease. Eur J Neurol 2010; 17(10): 1236–1248.
5. Sheardová K, Hort J, Rusina R, Bartoš A, Línek V, Ressner P et al. Doporučené postupy pro léčbu Alzheimerovy nemoci a dalších onemocnění spojených s demencí. Cesk Slov Neurol N 2007; 70/103(5): 253–258.
6. Ressner P, Hort J, Rektorová I, Bartos A, Rusina R, Linek V et al. Doporučené postupy pro diagnostiku Alzheimerovy nemoci a dalších onemocnění spojených s demencí, Cesk Slov Neurol N 2008; 71/104(4): 494–501.
7. Folstein M, Folstein S, McHughs P. "Mini-Mental State". A practical method for grading the cognitive state of patients for the clinician. J Psychiatric Res 1975; 12(3): 189–198.
8. Solomon PR, Hirschoff A, Kelly B, Relin M, Brush M, DeVeaux RD et al. A 7 minute neurocognitive screening battery highly sensitive to Alzheimer's disease. Arch Neurol 1998; 55(3): 349–355.
9. Mathuranath, PS, Nestor PJ, Berrios GE, Rakowicz W, Hodges JR. A brief cognitive test battery to differentiate Alzheimer's disease and frontotemporal dementia. Neurology 2000, 55(11): 1613–1620.
10. Hachinski VC, Iliff LD, Zilhka E, Du Boulay GH, McAllister VL, Marshall J et al. Cerebral blood flow in dementia. Arch Neurol 1975; 32(9): 632–637.
11. Bartos A, Kalvach P, Trošt M, Ertsey C, Rejdak K, Popov L et al. Postgraduate education in neurology in Central and Eastern Europe. Eur J Neurol 2001, 8(6): 551–558.
12. Hort J, Bartos A, Pirttilä T, Scheltens P. Use of cerebrospinal fluid biomarkers in diagnosis of dementia across Europe. Eur J Neurol 2010; 17(1): 90–96.
13. Waldemar G, Dubois B, Emre M, Scheltens P, Tariska P, Rossor M. Diagnosis and management of Alzheimer's disease and other disorders associated with dementia. The role of neurologists in Europe. European Federation of Neurological Societies. Eur J Neurol 2000: 7(2): 133–144.