

Review article

Delirium: Guidelines for general hospitals

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Received 30 May 2006; received in revised form 25 September 2006; accepted 3 October 2006

Abstract

Objective: Delirium is highly prevalent in general hospitals but remains underrecognized and undertreated despite its association with increased morbidity, mortality, and health services utilization. To enhance its management, we developed guidelines covering all aspects, from risk factor identification to preventive, diagnostic, and therapeutic interventions in adult patients. **Methods:** Guidelines, systematic reviews, randomized controlled trials (RCT), and cohort studies were systematically searched and evaluated. Based on a synthesis of retrieved high-quality documents, recommendation items were submitted to a multidisciplinary expert panel. Experts scored the appropriateness of recommendation items, using an evidence-based, explicit, multidisciplinary panel approach. Each recommendation was graded according to this

process' results. **Results:** Rated recommendations were mostly supported by a low level of evidence (1.3% RCT and systematic reviews, 14.3% nonrandomized trials vs. 84.4% observational studies or expert opinions). Nevertheless, 71.1% of recommendations were considered appropriate by the experts. Prevention of delirium and its nonpharmacological management should be fostered. Haloperidol remains the first-choice drug, whereas the role of atypical antipsychotics is still uncertain. **Conclusions:** While many topics addressed in these guidelines have not yet been adequately studied, an explicit panel and evidence-based approach allowed the proposal of comprehensive recommendations for the prevention and management of delirium in general hospitals.

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Keywords: Diagnosis; Treatment; Clinical epidemiology; Confusional state; Delirium; Nonpharmacological therapy; Prevention; Screening; Systematic review

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Introduction

Delirium is an acute change in cognition with altered consciousness and impaired attention that fluctuates over time [1]. It is a frequent condition seen in general hospitals. Its prevalence ranges from 11% to 33% on admission [2–4], and its incidence during hospital stay ranges between 3% and 56% [2,3,5,6]. Delirium is associated with adverse outcomes, including increased morbidity, increased mortality, and increased health services utilization [7–15]. Despite these observations, delirium recognition rates are low (12–43%) [4,16–18], and its management remains inadequate in up to 80% of patients [16]. This suggests lack of preventive and screening activities, missed diagnoses, and inappropriate management of diagnosed delirium. Beneficial changes following guidelines implementation have been demonstrated in several domains [19]. Following the adaptation [20] and implementation [21] of guidelines for depression in general hospitals, we undertook the development of new specific guidelines covering all relevant aspects of the management of delirium among adult patients in general hospitals.

Methods

We chose to start with a strategy of adapting published guidelines, where available, in order not to perform a new valid high-quality work that had been previously conducted [22]. Thus, we first searched to identify high-quality clinical practice guidelines and completed our sources of information with systematic reviews and, in the absence of such documents, clinical trials and cohort studies, when appropriate. The main steps of guidelines development were: (a) a systematic literature search; (b) the rating of each basic element of recommendation (recommendation item) derived from the literature by a multidisciplinary expert panel, using nominal group technique [23]; (c) the incorporation of approved recommendation items in specific recommendations; and (d) a review of the final recommendations by international experts. This process was conducted by the first author, a psychiatry resident, assisted by a development team (senior psychiatrist and senior clinical epidemiologist), in collaboration with a multidisciplinary expert panel representative of the future users of the guidelines. The panel included 14 experts: four psychiatrists (two specialized in old age psychiatry), one geriatrician, one psychiatric nurse, one neurologist, one intensive care clinician, one intensive care nurse, one general internist, one anesthetist, one orthopedic surgeon, one clinical epidemiologist, and one pharmacologist.

Literature search

The aim of this search was to identify existing guidelines and systematic reviews on delirium in adults and in the elderly. Delirium in children was beyond the scope of this research project. Two different search strategies were

performed, based on a previously developed and tested strategy (www.chuv.ch/cep/cpic/IPC_strat.html). Medline, PsychINFO, Web of Knowledge, EMBASE, and the Cochrane Library databases were used to identify publications in English and French from 1997 to August 2004 with the keywords “delirium,” “confusion,” “hallucination,” and “delusion.” Articles were selected through a three-step screening process based on reviews of the title, abstract, and content of the paper. Additional references from bibliographies were reviewed and included if considered of relevance. The sites of the National Guideline Clearinghouse (www.guideline.gov), the Guidelines International Network (www.g-i-n.net), the National Institute for Clinical Excellence (www.nice.org.uk), the New Zealand Guidelines Group (www.nzgg.org.nz), the Scottish Intercollegiate Guidelines Network (www.sign.ac.uk), and national psychiatric associations were examined. In addition, specific searches were developed for topics (such as risk factors for delirium, prevention of delirium, and physical restraints) not covered by recent guidelines or systematic reviews. Medline, PubMed, EMBASE, and the Cochrane Library were used without time limitations for these searches. Detailed literature search strategies are available from the authors on request. The literature search was updated for the submission of this article. It was repeated using the same methodology for the period from January 2004 to February 2006.

Results of literature search

Searches on guidelines identified 1550 papers, including 519 articles in Medline, 67 articles in PsychINFO, 724 articles in the Web of Knowledge, and 240 articles in EMBASE. Four guidelines were identified in Medline [24–27]. No additional guidelines were found in PsychINFO, the Web of Knowledge, or EMBASE. One additional guideline was identified on an Internet site [28], and another was identified through contacts with delirium experts [29]. Searches on systematic reviews identified 3178 papers, including 2099 articles in Medline, 334 articles in PsychINFO, 724 articles in the Web of Knowledge, and 21 articles in the Cochrane Library. Sixteen systematic reviews [7,12,30–43] were found in Medline, one in the Web of Knowledge [44], one in EMBASE, [45] and one in the Cochrane Library [46]. No additional systematic review was found in PsychINFO. One systematic review was identified on an Internet site [47]. Altogether, 5 guidelines and 19 systematic reviews were therefore identified. The results of literature search update are not detailed here because of space limitations but are available from the authors on request. No new guidelines were retrieved by updating. Five systematic reviews were identified [48–52]. The quality of retrieved guidelines was evaluated with the Appraisal of Guidelines for Research and Evaluation instrument (www.agreertrust.org) by two independent raters (L.M. and R.V.). Systematic reviews were evaluated by the first author using the Cochrane Library criteria [53] and existing references [54,55]. The six most important domains assessed were: (a) clarity of the clinical

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