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UNTANGLING THE THREADS OF DELIRIUM: A REVIEW ON ITS MULTIFACETED NATURE AND DIAGNOSTIC COMPLEXITIES

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ABSTRACT Delirium prevention involves multifaceted strategies, targeting modifiable risk factors through nonpharmacologic interventions. Orientation protocols, cognitive stimulation, sleep enhancement, early mobilization, and minimizing physical restraints are key components. Additionally, addressing medication-related risks and prompt management of medical complications are crucial preventive measures. In delirium management, identifying and treating underlying conditions, providing supportive medical care, and managing agitation are essential. Antipsychotic medications, benzodiazepines, and cholinesterase inhibitors have specific roles, with cautious consideration of potential risks. Pain management, especially with nonopioid analgesics, plays a pivotal role. Ethical considerations, including informed consent and respecting patient preferences, are integral to the treatment approach. Delirium outcomes are severe, impacting older individuals with prolonged hospitalizations, functional and cognitive decline, elevated mortality rates, and an increased risk of institutionalization. Mortality associated with delirium remains high even after adjusting for confounding factors, making it an independent marker for post-hospitalization mortality. Persistent cognitive dysfunction, particularly in those with underlying dementia, is a concerning long-term outcome.

KEYWORDS : Delirium prevention, management, nonpharmacologic interventions, underlying conditions, ethical considerations.

INTRODUCTION

Delirium is a transient confusional state marked by altered consciousness and attention, often caused by medical conditions, substance use, or medication side effects. It manifests as fluctuating cognitive and perceptual disturbances, with symptoms ranging from heightened vigilance and psychomotor overactivity to hypoactive states involving somnolence.

Managing delirium involves expert consensus and observational data, given the challenges of conducting controlled trials in cognitively impaired patients. Primary prevention focuses on nonpharmacologic, multicomponent strategies, targeting high-risk individuals and avoiding exacerbating factors.

Key principles include addressing underlying illnesses, offering supportive care to prevent decline, and, when necessary, using low-dose, short-acting pharmacologic agents to control severe behaviors. This approach prioritizes holistic patient well-being and addresses contributing factors for optimal outcomes. (1,2).

METHODS

For this narrative review on delirium, we conducted a comprehensive literature search using a systematic approach. The search strategy involved employing both controlled vocabulary terms, such as Medical Subject Headings (MeSH), and free-text keywords.

The objective was to identify pertinent articles spanning from the inception of available literature to the present, covering diverse aspects of delirium. Key search terms encompassed "delirium," "acute confusional state," "alteration of consciousness," and related variations.

We utilized Boolean operators (AND, OR) to refine the search, ensuring a thorough compilation of literature. Language restrictions were deliberately omitted to enhance inclusivity and encompass diverse perspectives.

The narrative review draws upon a meticulous analysis of selected references, presenting a comprehensive and evidence-based exploration of delirium, encompassing its definition, epidemiology, clinical features, and management strategies.

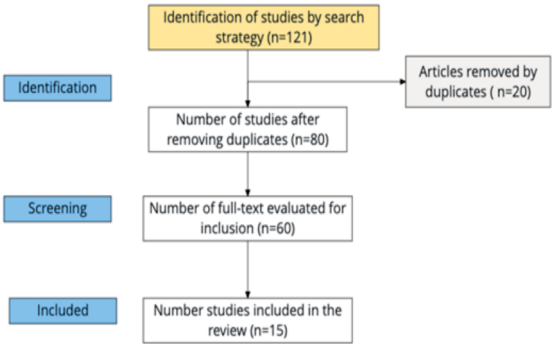

Figure 1. PRISMA.

Prevention

Delirium, characterized by acute confusion and altered consciousness, poses a significant challenge in prevention due to its multifactorial nature. While no single intervention guarantees prevention, evidence suggests that employing multicomponent, nonpharmacologic strategies targeting modifiable risk factors can reduce delirium incidence. Several interventions focus on mitigating risk factors, including orientation protocols, cognitive stimulation, sleep facilitation, early mobilization, and minimizing physical restraints for patients with limited mobility (3,4).

Orientation protocols involve providing environmental cues like clocks and calendars to combat disorientation. Cognitive stimulation, particularly for those with cognitive impairment, includes regular visits while avoiding sensory overstimulation. Enhancing physiologic sleep, avoiding nighttime disturbances, and early mobilization with limited physical restraints contribute to preventive efforts. Visual and hearing aids are recommended for respective impairments. Monitoring and managing medications that may precipitate delirium, such as benzodiazepines, opioids, dihydropyridines, and antihistamines, are crucial. Computerized systems identifying problematic medications show promise in reducing delirium incidence. Additionally, addressing medical complications promptly, including hypoxemia and infections, is essential (5).

Pain management plays a pivotal role in prevention.

Nonopioid analgesics are preferred, considering opioids, especially meperidine, can increase delirium risk. Preemptive pain treatment, use of long-acting opioids, and nonpharmacologic interventions like fascia iliaca compartment block have demonstrated efficacy. Multicomponent interventions targeting specific risk factors, such as cognitive impairment and immobility, have shown significant reductions in delirium episodes and total days with delirium. However, medication-based prevention lacks robust evidence. Cholinesterase inhibitors, antipsychotic agents, dexmedetomidine, gabapentin, and melatonin have been studied, but results are inconsistent. While some studies suggest benefits, others report adverse effects or no significant reduction in delirium incidence (6).

Management

Treatment of Underlying Conditions:

Delirium can be triggered by various medical conditions, and identification of the underlying acute illness is crucial for targeted therapy. Common conditions associated with delirium include metabolic encephalopathy (fluid and electrolyte disturbances, infections, organ failure, hypoglycemia), drug toxicity, and withdrawal from alcohol and sedatives. Specific therapies are directed toward addressing these medical conditions (7,8).

Supportive Medical Care:

The delirious patient is vulnerable to complications, including irreversible functional decline. Early identification and comprehensive intervention aim to treat underlying causes and prevent complications such as immobility, aspiration, and skin breakdown. While evidence supporting the outcome improvement of delirium management is limited, an interdisciplinary approach focusing on hydration, nutrition, mobility, pain control, skin care, and incontinence management is recommended (8).

Managing Agitation:

Dealing with disruptive behaviors, especially agitation, poses a challenge in delirium therapy. Nonpharmacologic interventions should be the primary approach, with psychotropic medication considered cautiously if necessary. Environmental manipulations, frequent reassurance, and family involvement can mitigate mild confusion and agitation. Physical restraints should be a last resort due to potential complications (8).

Antipsychotic Medications:

Antipsychotic agents, specifically low-dose haloperidol, are recommended for severe agitation in delirium, with a preference for short-term use. Newer atypical antipsychotics like quetiapine, risperidone, ziprasidone, and olanzapine have shown similar efficacy with fewer side effects in other clinical settings. However, evidence supporting the use of antipsychotics in delirium is inconclusive, and their potential risks, including mortality, must be considered (9).

Benzodiazepines:

Benzodiazepines play a limited role in delirium treatment, primarily indicated for sedative drug and alcohol withdrawal. Overprescription is common, and their use should be carefully considered due to the potential to worsen confusion and sedation (9).

Cholinesterase Inhibitors and Other Sedative Agents:

Cholinesterase inhibitors have no role in delirium treatment, and their use is associated with higher mortality. Other sedative agents, including dexmedetomidine and propofol, are used in critical care but may contribute to delirium (9).

Managing Pain:

Considering pain as a contributor to delirium, analgesia is provided cautiously in postoperative and post-trauma settings. Pain management should balance relief with the potential to contribute to delirium (10).

Hypoactive Delirium:

Symptomatic treatment is generally not used for hypoactive delirium. Stimulant drugs like methylphenidate may be considered, but evidence is limited, and caution is advised due to potential risks (11).

Terminal Delirium:

In palliative care, both hyperactive and hypoactive delirium may be present. Antipsychotic medications, particularly haloperidol, are used for severe agitation. Palliative sedation with benzodiazepines may be considered in cases of severe preterminal distress (12).

Ethical Considerations:

The treatment of delirium involves ethical considerations, especially considering the critical nature of the illness and impaired decision-making capacity of patients. Implied consent allows emergency treatment, but efforts should be made to assess cognitive abilities, decision-making capacity, and patient treatment preferences. Informed consent, surrogate decision-making, and respecting patient preferences are crucial aspects of ethical delirium management (13).

Outcomes

Delirium significantly impacts the health of older individuals, leading to prolonged hospitalizations, functional and cognitive decline, elevated mortality rates, and an increased risk of institutionalization. Mortality associated with delirium is notably high, with estimated one- and six-month mortality rates approximately twice that of patients without delirium. Even after adjusting for confounding factors, delirium remains an independent marker for mortality at 6 or 12 months post-hospitalization. The duration of delirium is linked to mortality, with protracted delirium associated with increased one-year mortality (14).

Persistent cognitive dysfunction is a concerning outcome, particularly in those with underlying dementia. Delirium's impact may endure for 12 months or longer, contributing to long-term cognitive problems. Studies reveal that patients with delirium during hospitalization experience a more rapid cognitive decline, with deterioration proceeding at twice the rate compared to those without delirium, persisting for up to five years after the hospital stay. Delirium episodes during hospitalization also adversely affect the course of Alzheimer's disease, leading to higher rates of cognitive decline, increased risk of death, and institutionalization in affected patients (15).

CONCLUSION

In conclusion, the prevention and management of delirium present complex challenges necessitating a comprehensive, multidimensional approach. Prevention strategies, primarily focusing on nonpharmacologic interventions, have demonstrated efficacy in reducing delirium incidence. However, the multifactorial nature of delirium requires tailored interventions addressing diverse risk factors, ranging from cognitive stimulation to sleep facilitation. The management of delirium involves targeted treatment of underlying conditions, meticulous supportive care, and judicious use of medications while considering potential risks. While certain medications, such as antipsychotics, play a role in managing severe agitation, their use requires careful consideration due to inconclusive evidence and potential risks. Ethical considerations, including informed consent and respecting patient preferences, are integral to the treatment process. Delirium's profound impact on older individuals,

leading to prolonged hospitalizations, functional decline, and elevated mortality rates, underscores the urgency of effective prevention and management strategies. Long-term cognitive consequences, especially in those with underlying dementia, emphasize the need for ongoing research and improved interventions to mitigate the lasting effects of delirium on cognitive health.

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