Electroconvulsive therapy does not increase the risk of dementia in patients with affective disorders

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WHAT IS ALREADY KNOWN ON THIS TOPIC

Electroconvulsive therapy (ECT) is an effective treatment for severe depressive disorders, with older age being predictive of a better outcome. Two earlier small studies have suggested an increased prevalence of dementia in patients having received ECT, but were flawed by major methodological shortcomings. Recent data on both short-term and long-term impact of ECT on cognitive function in older patients are reassuring,[1] even in the presence of age-related brain changes.[2]

METHODS OF THE STUDY

In this Danish cohort study,[3] almost 170 000 people aged 10 years and older that had a first-time emergency department contact or in- or outpatient hospital contact for depression between 2005 and 2015 were included.

Patients were followed up, for a median of 5 years (872 874 person-years), for incidental dementia, defined as either a hospital discharge diagnosis of dementia (noted in the Danish National Patient Registry) and/or a prescription of an acetylcholinesterase inhibitor.

Of the 5901 patients treated with ECT, 217 (3.6%) developed dementia compared with 4987/162.114 (3.1%) not treated with ECT.

The risk of dementia was not significantly associated with ECT. Moreover, in patients aged 70 years and older, having had at least one ECT was associated with a decreased rate of dementia. This finding did not prove significant, however, in the propensity-score matched sample. In that same age group, both in the original and in the propensity score-matched sample, having had >10 ECT sessions was associated with a lower incidence of dementia.

There was an increased incidence of dementia in men with lowest premorbid cognitive ability compared with those with higher cognitive scores, but these estimates were based on a few cases of dementia and were not significant.

WHAT THIS PAPER ADDS

- ECT, in patients with affective disorders, does not increase the risk of dementia (Hazard Ratio (HR) 0.98, 95% CI 0.76 to 1.26).
- Bitemporal electrode placement does not increase the risk of dementia.
- Patients of 70 years and older that had >10 ECT sessions have a lower risk of dementia (HR 0.54, 95% CI 0.36 to 0.80).

LIMITATIONS

- The reliability of the diagnosis is unsure, given the fact that it is based on a diagnosis, noted in the Danish National Patient Registry and/or a prescription/refill of an acetylcholinesterase inhibitor.
- Limited follow-up period, which might lead to an underestimation of the incidence of dementia.
- Preliminary conclusions on increased incidence of dementia in men with low premorbid cognitive ability are underpowered. As the authors state, the estimates were based on a few cases of dementia and were not significant (p=0.08).

WHAT NEXT IN RESEARCH

Although this study is large and methodologically sound, its results need replication. In a subgroup of patients, this study has attempted to tackle the issue of an increased risk for dementia in patients that have a low premorbid cognitive reserve. Given the low number of cases of dementia in this subgroup, no conclusions could be drawn. This important question remains to be answered in future research. The notion that patients with a lower cognitive reserve might be more prone to develop dementia, however, assumes that ECT decreases cognitive abilities. This study (and others), however, suggests that it does not. The contrary might be the case. ECT might have 'anti-dementia' mechanisms of action: it increases neuroplasticity,[4] and some data suggest a beneficial impact on amyloid load.[5]

DO THESE RESULTS CHANGE YOUR PRACTICES AND WHY?

Probably yes. This study adds to the growing reassuring literature on long-term cognitive effects of ECT in older patients. Although a subgroup of patients will indeed experience (both short-tern and long-term) cognitive side effects,[1] this study proves that the risk of a cognitive deterioration is not increased. Therefore, clinicians should not hesitate to prescribe ECT in this vulnerable patient group.

Competing interests None declared.

Patient consent Not required.

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