Deficit of cognitive inhibition in depressed elderly: a neurocognitive marker of suicidal risk

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BACKGROUND: Cognitive deficits, in relation to ventral and dorsal prefrontal cortex dysfunctions, have been associated with a higher risk of suicidal acts in young adult patients. Although a public health concern, much less is known about the neurocognitive basis of suicidal behavior in elderly. Here, we aimed at assessing alterations in cognitive inhibition, a suspected major mechanism of the suicidal vulnerability, in suicidal depressed elderly.

METHODS: We compared 20 currently depressed patients, aged 65 and older who recently attempted suicide to 20 elderly subjects with a current depression but no personal history of suicide attempt and 20 elderly controls. Using an extensive neuropsychological battery, we particularly examined different aspects of cognitive inhibition: access to relevant information (using the Reading with distraction task), suppression of no longer relevant information (Trail Making Test, Rule Shift Cards), and restraint of cognitive resources to relevant information (Stroop test, Hayling Sentence Completion test, Go/No-Go).

RESULTS: After adjustment for age, intensity of depression, Mini-Mental State Examination score and speed of information processing, suicidal depressed elderly showed significant impairments in all 3 domains of cognitive inhibition in comparison to both control groups.

LIMITATIONS: Our results need replication in a larger sample size.

CONCLUSIONS: Our study suggests that the inability to inhibit neutral information access to working memory, restrain and delete irrelevant information may impair the patient's capacity to respond adequately to stressful situations subsequently leading to an increased risk of suicidal behavior during late-life depression. Interventions may be developed to specifically target cognitive impairment in the prevention of suicide in depressed elderly.