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5-HTTLPR polymorphism of serotonin transporter and effects of sertraline in terminally ill cancer patients: report of eleven cases

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ABSTRACT

Depression is difficult to detect in cancer patients, though its determination offers an opportunity to relieve patients' suffering in palliative care. Selective serotonin reuptake inhibitors (SSRIs) are the treatment of choice for mood disorders, but they show a highly variable response. The short allelic variants "s/s" and "s/l" of the 5-HTTLPR polymorphism in the promoter region of the serotonin transporter gene has been consistently associated with a poorer response to SSRIs. The aim of this study has therefore been to examine depression, anxiety and mental adaptation to cancer in terminally ill and depressed cancer patients, in relation to treatment with sertraline and to the 5-HTTLPR genetic polymorphism. Eleven consecutive depressed patients with different forms of advanced cancer who were admitted to the Hospice of the Casa di Cura "Pineta del Carso" (Trieste, Italy) were treated with sertraline for two weeks and their response was determined and related to 5-HTTLPR.

Sertraline significantly reduced the average depression and anxiety subscale scores of HADS, as well as the scores of the subscales of Mini-MAC. When the effects of sertraline were analyzed in relation to the 5-HTTLPR polymorphism, only patients with the "l/l" allelic variant had significantly lower scores of HADS anxiety, Mini-MAC hopelessness-helplessness and anxious preoccupation, and a higher score for the fighting spirit of Mini-MAC; the depression score was significantly reduced in patients with both allelic variants. These data indicate that sertraline is effective after two weeks of treatment in terminally ill cancer patients, acting not only on depression but also on anxiety and mental adaptation to cancer. Moreover, the effect of sertraline significantly depended on the genetic polymorphism of the serotonin transporter, being more pronounced in patients carrying the "l/l" genetic variant; these findings seem to encourage the examination of a larger sample of patients.

Key words: *palliative care, pharmacogenetics, antidepressant drugs, mental adaptation to cancer.*

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