

Serotonin transporter 5-HTTLPR polymorphism and response to citalopram in terminally ill cancer patients: report of twenty-one cases

Maria Anna Capozzo¹, Giulia Schillani¹, Eugenio Aguglia², Maurizio De Vanna², Luigi Grassi³, Maria Anna Conte⁴, and Tullio Giraldi¹

¹Section of Pharmacology, Department of Biomedical Sciences, and ²Psychiatric Clinic, Faculty of Medicine, University of Trieste, Trieste; ³Section of Psychiatry, Department of Medical Sciences of Communication and Behavior, University of Ferrara, Ferrara; ⁴Hospice, Casa di Cura Pineta del Carso, ASL1, Trieste, Italy

ABSTRACT

The aim of this study was to examine the effects of the SSRI antidepressant drug citalopram on anxiety, depression and mental adjustment to cancer in terminally ill cancer patients, considering also the 5-HTTLPR genetic polymorphism.

A group of twenty-one consecutive patients admitted to the hospice of the Casa di Cura Pineta del Carso (Trieste, Italy) with different types of advanced cancer, who were clinically judged to require treatment with an antidepressive drug, was treated with citalopram for two weeks. The response was determined and related to 5-HTTLPR.

Citalopram significantly reduced the scores on the depression and anxiety subscales of the Hospital Anxiety and Depression Scale (HADS). When the effects of citalopram were analyzed in relation to the 5-HTTLPR polymorphism, the HADS depression score was significantly decreased only in patients with the "l/l" allelic variant of the serotonin transporter conferring high functional activity, while the score of the Mini-MAC fatalism scale was significantly increased in patients carrying at least one "s" allele. These preliminary findings seem to indicate that two weeks of treatment with citalopram are effective in reducing depressive symptoms in terminally ill cancer patients. Moreover, the effects of citalopram on fatalism as a strategy of mental adaptation to cancer, and on depressive symptoms depend on the allelic variants of the 5-HTTLPR genotype of the patients. These results seem to encourage the examination of a larger patient sample and of different treatment schedules, as well as a more thorough characterization of fatalism as a coping strategy in cancer patients.

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

Acknowledgments: This work was supported by the Programma di Ricerca Scientifica di Interesse Nazionale of the Ministero dell'Istruzione, dell'Università e della Ricerca entitled "Prognostic factors for the success of pharmacotherapy in oncology and psychiatry; relationships between the modalities of adaptation to stressful life experiences and the polymorphism of serotonin transporter and monoaminooxidases (2004 – Prot. 2004062349)."

Correspondence to: Dr Maria Anna Capozzo, Section of Pharmacology, Department of Biomedical Sciences, University of Trieste, Via L. Giorgieri 7, 34127 Trieste, Italy.
Tel +39-040-558 3537;
fax +39-040-577435;
e-mail mcapozzo@units.it

Received October 13, 2008;
accepted February 17, 2009.