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Early effects of different classes of antidepressants on emotion recognition processing

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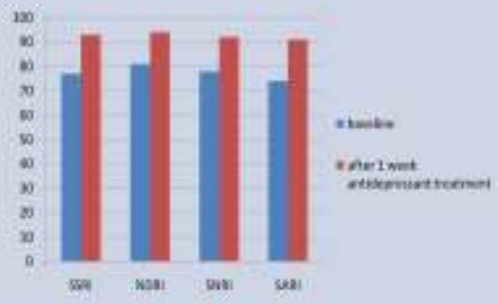
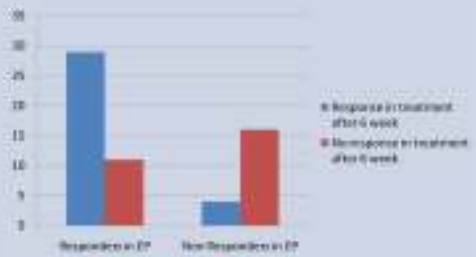
Background: According to the American Psychiatric Association, major depressive disorder is a common and serious medical illness that negatively affects the way people feel, think and act. Depression affects an estimated one in 16 adults (5.5%) in any given year. Brain chemistry may contribute to an individual's depression and may factor into their treatment, therefore, antidepressants might be prescribed. Recognition of others' emotions is an important aspect of interpersonal communication. In major depression, significant emotion recognition impairment has been reported. Previous research shows that antidepressants can restore the balance between negative and positive emotional processing early in treatment, indicating a role of this effect in later mood improvement. The Emotion Recognition Task (ERT) is a computer-generated paradigm for measuring the recognition of six basic facial emotional expressions: anger, disgust, fear, happiness, sadness, and surprise. During this test, video clips of increasing length are presented, starting with a neutral face that changes into a facial expression of different intensities.

Objective: The purpose of this study was to examine the early effects of different classes of antidepressants (SSRI: escitalopram, NDRI: bupropion, SNRI: duloxetine, SARI: trazodone) on early emotional recognition processing in individuals with depression.

Recognition of happy facial expressions in ERT after 1 week treatment with antidepressants



Responders in emotional processing vs non-responders in treatment outcome after 6 week of antidepressant treatment



Methods: The sample consisted of 64 women who have visited the Mental Health Center of Rethymno, aged 30-40 y.o., with educational level > 9 years of education, diagnosed with first episode mild-moderate unipolar depression (ICD-10 diagnosis). Participants completed the Hamilton Depression Rating Scale (HAM-D), and the Montgomery-Asberg Depression Scale (MADRS) and were divided into four groups, according to the class of antidepressant prescribed: 1st Group SSRI (16 women), 2nd Group NDRI (15 women), 3rd Group SNRI (18 women), and 4th Group SARI (15 women). ERT, HAM-D, and MADRS were administered at baseline, after 7 days of medication's administration and after 45 days.

Results:. Overall, at baseline, most of the participants performed an increased recall of negative (fear) emotional material in the ERT. More specifically, participants overestimated the emotional expression of fear; actually, they recognized this facial expression even at its mildest intensity. The facial expression of happiness, on the other hand, was underestimated by the participants, especially when the intensity of the expression was low. After 7 days of drug therapy, even though clinical improvement is not established yet, participants had a better outcome, concerning positive emotional processing: they showed an increased recognition of faces as happy, whereas, when the intensity of the facial expression of fear was low, they performed a decreased response bias towards fearful faces, irrespectively of the class of antidepressant administered.

Conclusions: Early changes in the recognition of facial emotion expressions of happiness and fear were predictive of later clinical response. The results of this study indicate that the performance at the perception of social signs, such as emotional facial expressions, acts as predictor of the clinical outcome early in therapy, irrespectively of the class of antidepressant administered. Therefore, this study provides support for the proposal that emotional processing models may facilitate decision-making about medication options early in the treatment process.