Al collegio docenti del Dottorato in Medicina Molecolare

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Ciclo XXXIII Tutor: Prof. Andrea Fagiolini

Relazione annuale – annual report

Introduction:

My research activity over the past year has primarily focused on the study of the relationship between depression and inflammation. My primary research hypothesis presumed a relationship between inflammation and depression and was based on previous observations and studies showing that the concentration of the acute phase protein, C-reactive protein (CRP), is abnormally elevated in sub-populations of depressed patients and is correlated with a higher degree of treatment resistance in depressed patients. Moreover, anti-inflammatory drugs have proven the ability to improve depression in subjects with higher baseline CRP concentration (greater than 0,5 mg/dl). The aim of my study was to evaluate if higher baseline values of CRP, and /or high white blood cells (WBCs) count, were associated to a lower degree of improvement over time in measures of depression severity, such as the scores in Clinical Global Impression (CGI) and the Montgomery Asberg Depression Rating Scale. As a second step, I will evaluate if the improvement over time of CRP correlates to a corresponding improvement in the measures of depression severity that are mentioned above.

Material and method

Study sample included 29 consecutive adult inpatients (14 males, age 19-94 years) who met the following criteria: 1) currently in a major depressive episode; 2) availability of Complete Blood Count (CBC) upon admission to the inpatient unit; 3) neutrophil leukocytosis or abnormal CRP values at admission. The improvement of depression during the period in the inpatient unit, was evaluated via the MADRS and CGI, whose scores at T0 (admission to the inpatient unit) were compared with the scores at T1 (discharge from inpatient unit).

Results

At baseline, 21 subjects showed leukocytosis, with abnormal neutrophil count, and normal CRP values, while 8 subjects showed high CRP values (CRP greater than 0,5 mg/dl) and normal leukocyte

and neutrophil count (CRP Group). The CRP Group showed a mean MADRS and CGI score reduction that was lower than the reduction observed in the leukocytosis group.

Despite the small sample size, this pilot study showed that patients with increased CRP levels show a worse response to treatment compared to patients with only neutrophil leukocytosis.

The goal for my research activity in the coming year will aim to expand the study sample and to recruit a third group of patients, showing an increase in both CRP and leukocyte levels. Also, I will evaluate if there are differences in terms of outcome (e.g. response to pharmacotherapy) among the three study groups. Furthermore, patients with elevated CRP and leukocytosis will be assessed for their blood levels of TNF-α, IL-1 and IL-6, as a means to start assessing the relationship between depression, inflammatory cytokines and response to treatment.

References and Publications over the past 1 year

- Relationship between inflammation biomarkers and improvement of depression: a pilot study (Barzagli F, Chioccioli M, Amodeo G, Famularo I, Silvitelli M, Fagiolini A.) Poster ECNP 2019
- Efficacy and tolerability of intravenous valproate in 153 bipolar patients (Amodeo G., Fagiolini A.) Poster ECNP 2019
- Il trattamento dei disturbi mentali in gravidanza e in trattamento (Simposio SOPSI 2019)
- Opzioni farmacologiche e non nella cura del disturbo depressivo maggiore, nuove frontiere (Simposio SOPSI 2019)

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