ESTABLISHING CUT-OFF OF INFILXIMAB AND ANTI-INFILXIMAB ANTIBODY LEVELS USING A COMMERCIAL ELISA IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Inpatients with rheumatoid arthritis (RA) the reasons for failure or loss of response to infliximab (IFX) are controversial, so far both IFX serum levels and the presence of antibodies (Ab) anti-IFX have been associated with these events. In this study we evaluated the correlation of serum levels of IFX and anti-IFX Ab in relation to clinical response in patients with RA.

Methods: We assessed 59 serum samples from patients diagnosed with RA treated with IFX (1st line), taken prior to infusion. Patients were classified as treatment response and DAS28 (Disease Activity Score 28 Joints) as sustained response or remission (DAS28 <2.6, >6 months) or loss of response (no remission, DAS28 >3.2 with >1 swollen joint and / or elevated CRP / ESR). The concentrations of anti-IFX and IFX levels were measured using a commercial ELISA kit (Progenika ™) following the manufacturer's recommendations. The sample size was previously calculated to ensure a sensitivity (0.6) and specificity (0.8), with a confidence interval of 95%, and related to the measurement of clinical activity index DAS28. Statistical analysis to establish the appropriate values for the cutoff in relation to clinical remission was performed using median (percentiles 25-75), U test Mann-Whitney and ROC curves (Receiver Operating Characteristic).

Results: The median IFX levels in no-remission RA patients (n = 35) was significantly lower (55 mg / ml, range: 0.0 to 163.5) compared with patients in remission (121 mg / ml; 40.7 to 262.8, p <0.05). We identified the optimal cutoff with ROC analysis for IFX levels as <0.73 mg / ml, which was associated with no-remission, with a sensitivity and specificity of 61% and 59%, respectively. Furthermore, the median titers of anti-IFX in patients in no-remission (0.0 AU / mL, 0.0 to 697.0) was not statistically different than in remission patients (0.0 AU / ml; 0.0-0, 0 UA, p > 0.05). ROC analysis could not be calculated because of the low percentage of positivity for anti-IFX Ab in the selected patient group (n = 10/59, 16.9%).

Conclusions: The cutoff values for IFX serum, rather than anti-IFX Ab determination, may be useful in relation to determine clinical response measured by DAS28 in RA. However, there is a priority in standardizing laboratory techniques (variability inter / intra-assay and inter / intra-laboratory) to validate this information and its possible clinical application.