BACKGROUND

Therapy with biopharmaceuticals has revolutionized therapy in patients with immune diseases such as psoriasis. Despite therapeutic efficacy of these agents, a variable percentage of patients lose response over time. Monitoring of Infliximab (IFX) trough concentrations (Cmin) and presence of anti-IFX antibodies (ATI) together with clinical response has been recommended to guide dosing decisions but the optimal therapeutic Cmin for IFX in psoriasis needs to be established.

OBJECTIVES

☑ The primary endpoint was to evaluate the IFX immunogenicity-exposure-response correlation in psoriasis.

☑ Secondary endpoint was to identify patient’s characteristics that could affect IFX Cmin and clinical response.

RESULTS

Study population

33 patients, of whom 33.3% were women, were included in the study and the total number of samples analyzed was 155. Patients characteristics are shown in Table 1.

Table 1. Patients characteristics. Results are shown as a mean (SD). BMI: body mass index; PASI: Psoriasis area severity index. IFX: infliximab. * Patients received more than one previous biological treatment regimen.

Median IFX dose was 5mg/kg/8w (range, 3mg/kg/12s-5 mg/kg/6w). All patients with dose-intensified regimen presented IMC> 27mg/m².

IFX exposure and ATI

Mean IFX Cmin was 2.4 mg/L (2.2). 6 patients tested ATI positive. IFX Cmin (mg/ml) distribution is shown in Table 2.

Table 2. IFX Cmin distribution.

Variables influencing IFX exposure

ATI

Cmin was significantly lower in positive ATI vs negative ATI samples (0.1 vs 2.7 mg/L; p<0.0005) (see Figure 1)

BMI

Overweight and obese patients presented a higher IFX Cmin than those with normal weight (2.68mg/L vs 1.64 mg/L; p=0.134).

MATERIAL AND METHODS

Study design and population: Prospective study in psoriatic adult patients receiving maintenance IFX between October 2013-November 2016.

Evaluations: Blood samples were collected under steady-state conditions before starting the intravenous infusion.

- We measured Cmin and ATI using a validated enzyme-linked immunosorbent assay (ELISA) kit (Promonitor®).

- Data on demographic, analytical and pharmacological variables and Psoriasis Area Severity Index (PASI) were recorded.

Statistical analysis: Mixed models were estimated to evaluate the association between Cmin and IFX response. Continuous variables were expressed as mean (standard deviation (SD)). Statistical analysis was carried out using R.

Treatment response

The percentage of patients achieving PASI 50, 75, 90 and 100 response was 85%, 73%, 59% and 48%. Patients achieving PASI 75/90/100 had a significantly higher Cmin than non-responders (Figure 2).

PASI score was significantly influenced by Cmin (IRR:0.79, IC95%:0.69-0.91). This remained significant when adjusting by gender, BMI, diagnosis, baseline PASI, leukocyte count, ATI status and immunomodulator treatment (IRR:0.8, IC95%:0.70-0.93), (Figure 3).

Similar results were obtained for PASI90/100 responses (Table 3).

CONCLUSIONS

☑ PASI score and achievement of PASI 90 response or higher were significantly influenced by IFX Cmin.

☑ The percentage of patients achieving PASI 75 or higher decreased with BMI, while Cmin values increased.

☑ IFX Cmin was significantly influenced by BMI and ATI presence.

☑ More studies are needed to define target serum levels and to evaluate the relationship between inflammation markers and PASI in overweight and obese patients.

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