Poster

[P25-7] P25-7: Immunosuppressive drugs (2): Monoclonal antibody and genotyping

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Mon. Sep 25, 2017 12:30 PM - 1:30 PM Annex Hall (1F)

(Mon. Sep 25, 2017 12:30 PM - 1:30 PM Annex Hall)

[P25-7-6] TDM of infliximab by LC-MS/MS using nSMOL in patients with inflammatory bowel disease

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Keywords: Infliximab, anti-drug antibody, LC-MS/MS, tumor necrosis factor alpha, inflammatory bowel disease

Background

Infliximab (IFX) is a therapeutic monoclonal antibody against tumor necrosis factor alpha (TNFa), and widely used to treat inflammatory bowel disease (IBD) including Crohn's disease and Ulcerative colitis. Immunogenicity is one of the problems in clinical use of IFX. The formation of antibodies to IFX decreases blood concentration of IFX, and causes the loss of response. Here, we examined serum concentrations of IFX, TNFa, and anti-drug antibody (ADA) against IFX in IBD patients to identify the biomarkers predicting the efficacy of infliximab.

Methods

Eighty-eight Japanese patients with IBD at Kyoto University Hospital were included in this study. Trough IFX levels were determined by LC-MS/MS (LCMS-8040, Shimadzu) with nano-Surface and Molecular-Orientation Limited Proteolysis (nSMOL). Serum TNFa and ADA were measured by Enzyme Linked Immunosolvent Assay (R&D Systems and Somru Bioscience).

Results

There was a big difference in serum concentrations of IFX among the patients. In 6 patients, ADA was detected, and their IFX levels were much low. Some of the patients with low IFX levels exhibited high CRP levels. TNFa was also detected in most patients. In some of the patients with high TNFa levels, CRP was also high. We classified the patients into four groups (IFX-high &TNFa-high, IFX-Low &TNFa-high, IFX-high &TNFa-low and IFX-low &TNFa-low). In IFX-high &TNFa-low group, the better efficacy for IFX therapy was observed, compared with in other three groups.

Conclusions

TDM of IFX is useful in the patients with IBD. TNFa levels in the blood would also be a good marker in the treatment with IFX.