Therapeutic effect of infliximab on Japanese patients with Crohn’s disease

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Background: Nutritional therapies have been a recommended first-line strategy for Crohn’s disease (CD) in Japan. While infliximab, a monoclonal antibody to tissue necrosis factor-alpha (TNF-α), has been shown to be effective in CD patients of Western countries, therapeutic effects of the agent in Japanese CD patients have not been elucidated precisely. We evaluated this issue with respect to 1) concomitant nutritional therapy, and 2) serial changes in intestinal lesions. Method: 1) By a review of clinical records in 24 nationwide institutions majoring in inflammatory bowel disease, the short-term effect of infliximab in 97 patients with active CD was retrospectively investigated. Crohn’s disease activity index (CDAI) at baseline and after two weeks of a single infliximab administration (5 mg/kg) was compared among patients under total parenteral nutrition (TPN group, n=36), those under elemental or polymeric diet (EN group, n=49) and those without TPN and EN (NN group, n=12). A decrease in CDAI ≥ 70 or a CDAI value < 150 at two weeks was regarded to be effective. 2) CDAI and endoscopic and/or radiographic findings in 30 patients with CD at our institution were compared between prior to and after infliximab administration. Cobblestone appearance, longitudinal ulcers, other small ulcers, intestinal fistula, and intestinal stenoses were the items investigated. Results: 1) CDAI at baseline was not different among the three groups. In each group, CDAI decreased significantly (from 250 (195–290) [median (interquartiles)] to 152 (123–233) in TPN group, p<0.0001; from 259 (200–325) to 180 (130–238) in EN group, p<0.0001; from 278 (222–291) to 164 (132–196) in NN group, p=0.003). Infliximab was effective in 63.9% of TPN group, in 55.1% of EN group and in 75% of NN group. The efficacy was not statistically different among the three groups (p=0.4). Multivariate logistic regression analysis revealed younger age to be a significant factor related to the efficacy of infliximab. 2) The CDAI decreased significantly two weeks after infliximab administration. The efficacy rates of infliximab within 8 weeks for cobblestone appearance, longitudinal ulcer, and other small ulcers were 100%, 100%, and 75% respectively. However, the efficacy rate for longitudinal ulcer decreased to 33% during the subsequent period. Similarly, infliximab improved all the internal fistula within 8 weeks of administration, but the efficacy rate during the subsequent period was 40%. When 8 patients, in whom TPN had been previously applied, were retrospectively analyzed, there was no difference in therapeutic effect on active intestinal lesions between TPN and infliximab. However, infliximab was more effective on internal fistula than TPN (100% vs 0%). These findings suggest that infliximab is effective in patients with CD under TPN or EN, and that age at infliximab administration may be predictive of a response to infliximab. Furthermore, infliximab is effective for active intestinal lesions and fistula of CD, although the effect does not sustain for a prolonged period.