UGT1A1*6 and *28 in Japanese colorectal cancer patients treated with irinotecan-based chemotherapy

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Purpose

UGT1A1 *6 and *28 is considered one of the most important pharmacogenetic predictor of the toxicity outcome of irinotecan-based chemotherapy in Japanese colorectal cancer patients. We evaluated the correlativity of a toxicity and effectiveness and UGT1A1 *6 and *28 gene polymorphism.

Methods

We investigated UGT1A1 polymorphism in 89 colorectal cancer patients who treated with irinotecan-based chemotherapy (fluorouracil, luecovorin, Irinotecan (FOLFIRI) or S-1, Irinotecan (IRIS)) in Hokkaido University hospital and Keiyuhkai Sapporo hospital. We classified them into group A with a hetero type of UGT1A1*6 or *28 and group B with a wild type.

Results

The frequency of haplotype*6 was 0.315 and the frequency of haplotype *28 was 0.157. The frequency of *6 homozygote was 0.034 and the frequency of *28 homozygote was 0.011. Grade 3 or 4 neutropenia was observed 48% in group A and 23% in group B (P=0.013). 1st line PFS was 12.7 months in group A and was 14.6 months in group B (P=0.5227). Overall response rate was 50% (CI, 19.1 to 80.9) in group A, and was 66.7% (CI, 42.9 to 92.5). 2nd line (after disease progression on 5-FU and oxaliplatin) PFS was 5.9 months in group A and was 6.3 months in group B (P=0.8337).

Conclusions

The hematological toxicity in colorectal cancer patients increases by a hetero type of UGT1A1*6 or *28 as reported. But there was no difference of PFS and overall response rate in group A and B.