Background: Most advanced GISTs are known to be resistant to conventional cytotoxic agents such as paclitaxel might have antitumor effect on GIST. The current study was designed to evaluate the efficacy and safety of paclitaxel in patients with advanced GIST after failure of at least both imatinib and sunitinib.

Methods: Patients received paclitaxel 80 mg/m² intravenously on days 1, 8, and 15 of a 4-week cycle. The primary endpoint was 16-week disease control rate (complete response [CR] + partial response [PR] + stable disease [SD]). Secondary endpoints were progression-free survival (PFS) and overall survival (OS). Translational correlation of PFS with expression of P-glycoprotein (P-gp) was also evaluated. This trial is registered with ClinicalTrials.gov, no. NCT 02607332.

Results: A total of 25 patients were enrolled. Median age was 61 years (range, 38-71), and 16 patients (64.0%) were male. Small bowel was the most common primary site (n = 17, 68.0%), followed by stomach (n = 7, 28.0%). Median 2 cycles (range, 1-12) of paclitaxel were administered per patient. No CR was observed. PR and SD were observed in one patient (4.0%) and 10 patients (40.0%), respectively. The 16-week disease control rate was 20.1%. With a median follow up duration of 20.8 months (range, 17.9-24.0) in surviving patients, median PFS and OS were 1.7 months (95% CI, 0.23-17.9) and 11.9 months (95% CI, 9.7-14.1), respectively. The most frequent grade 3/4 adverse events were neutropenia (20.0%) and leukopenia (8.0%). P-gp expression was evaluable in 19 patients, and a trend toward poor PFS was documented in patients with high P-gp intensity score (3 vs. 1-2; HR 2.3, P = 0.12).

Conclusions: Paclitaxel was well tolerated with modest antitumor efficacy in heavily pretreated patients with advanced GIST. Additionally, P-gp maybe a potential biomarker for selecting patients for paclitaxel treatment.

Clinical trial identification: NCT 02607332.

Legal entity responsible for the study: Asan Medical Center.

Funding: Hannmi.

Disclosure: Y. Kang: Consultant: Ono, BMS, Taiho, Roche, Lilly, Blueprint, Taiho, Daewha, LSK Biopharma. All other authors have declared no conflicts of interest.