

**Abstract Title: Evaluation of chemosensitivity for patients with advanced gastric cancer by collagen gel droplet embedded culture drug sensitivity test (CD-DST) and its correlation with clinicopathological characteristics**

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**BACKGROUND:** Because the symptoms of early gastric cancer (GC) was hidden and not obvious, there are still amount of patients diagnosed at an advanced stage. For the heterogeneous of human tumors, the response of the same histological type and differentiation of tumor to anticancer drug sensitivity was different. The sensitivity of anti-cancer drugs was about 20-56%, so it was blindness to have all patients treated with the same kind of chemotherapy. Therefore, it will be a key point to find sensitive drugs for individual tumor. Collagen gel droplet embedded culture-drug sensitivity test (CD-DST) is a newly developed chemosensitivity test.

**HYPOTHESIS:** CD-DST is a novel chemosensitivity test which is efficiency to identify anticancer drugs and establish individualized treatment for patients with advanced GCs.

**METHODS:** Fifty-eight fresh specimens for CD-DST were collected from patients with primary advanced GC who underwent surgery at the Department of Gastroenterology, Tumor Hospital of Harbin Medical University from October 2014 to March 2015. CD-DST was performed by using a CD-DST kit. The growth rate and T/C% ratio of CD-DST were compared by Student's t-test. The association between the CD-DST results and clinicopathologic variables were tested by  $\chi^2$  test.

**RESULTS:** In this study, we total have 58 patients enrolled in CD-DST and successfully performed in 50 patients. 8 patients were failure in evaluation for an insufficient number of viable tumor cells, poor growth rate in collagen gel droplets (growth rate less than 0.8), fibroblas or/and bacterial contamination. The mean growth rate of cancer cells over 7 days of incubation was 1.3 (from 0.80 to 4.95). The mean values of T/C% were 69.12%, 73.61%, 59.58%, 59.72% and 77.28% for PAC, EPI, TS-1, L-OHP and CPT-11 respectively. Of these patients, there were 32%(16/50) patients sensitive to PAC, 32%(16/50) patients sensitive to EPI, 54%(27/50) patients sensitive to TS-1, 50%(25/25) patients sensitive to L-OHP, and 34%(11/50) patients sensitive to CPT-11. Additionally, 3 patients were sensitive to all the drugs and 11 patients resistance to all the drugs.