

# IS-15 ANALYSIS OF THE CYTOTOXIC INTERACTION BETWEEN CISPLATIN AND HYPERTHERMIA IN A HUMAN OVARIAN CARCINOMA CELL LINE

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**Objective:** Expression of the heat-shock (h-s) protein HSP-60 is associated with poor survival patients with ovarian carcinoma. We examined both the nature of the interaction between hyperthermia and cisplatin (DDP) using the human ovarian carcinoma cell line 2008 and the effect on this interaction of the induction of the h-s response.

**Methods:** Cells were exposed to 45°C hyperthermia either alone or in combination with DDP for varying periods and at varying concentrations. Following hyperthermia and/or DDP exposure, the cells were incubated at 37°C for 10 days. Clusters of > 50 cells were scored as a colony. The nature of the interaction between DDP and h-s was determined by median-effect analysis(m-ea). Uptake of DDP was investigated using the DDP analogue [<sup>3</sup>H]-cis-dichloro(ethylenediamine) platinum (II) (DEP). Cells were treated for 1 h with 5 μM [<sup>3</sup>H]-DEP (5 μCi/ml) either concurrently with 1 h hyperthermia or after a delay of 0-12 h following hyperthermia.

**Results:** Despite the observation that 45°C hyperthermia increased the intracellular uptake of DEP during a 1-h exposure by 155%±5% (P=0.02), m-ea indicated only cytotoxic additivity. When cells were first exposed to hyperthermia for various periods and then allowed to incubate at 37°C for 4 h to allow induction of the h-s genes before being treated with DDP for 1 h, there was a very small degree of antagonism between hyperthermia and DDP (combination index at 50% cell kill, 1.11±0.04).

**Conclusions:** DDP and hyperthermia interact only in an additive manner against this cell line and that the induction of h-s proteins by hyperthermia does not antagonize the activity of DDP.

# IS-16

The value of Magnetic Resonance Imaging with Endorectal Surface Coil in the Staging of Carcinoma of Uterine Cervix

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To assess the effectiveness of Magnetic Resonance Imaging(MRI) with endorectal surface coil in the staging of carcinoma of the uterine cervix with emphasis on parametrial involvement.

Thirty women with clinically and radiographically proven carcinoma of the uterine cervix were initially included for this study, but thirteen patients were excluded on account of the stage IIa. CT and MR findings of the remaining seventeen patients were performed at Cheil General Hospital and compared along with clinical findings with the special emphasis on the parametrial involvement by the tumor. Staging was assessed by CT and MRI, and the results were compared with the pathological staging. Radical abdominal hysterectomy with the pelvic and paraaortic lymph node dissection was done to all seventeen patients.

The staging made primarily by CT and MRI was either stage I or IIa, but MR images with endorectal surface coil was superior to CT in the visualization of depth of tumor infiltration, especially parametrial involvement. The determination of the depth of the tumor made by MR images showed statistically significant correlation with histologic evaluation(R=0.768, p<0.01). The accuracy rate for the evaluation of the parametrial involvement was 88.2% for CT and 97.0% for MRI. The overall accuracy rate for tumor staging was 70.5% for clinical, 58.8% for CT and 82.3% for MRI evaluation. The accuracy rate in evaluation of the pelvic and paraaortic lymph node was 88.0% for CT, but the evaluation done by MRI was not adequate due to small FOV (field of view).

In assessment of the staging of carcinoma of the uterine cervix, MR images with endorectal surface coil was superior to CT, especially in the evaluation of the parametrial involvement.