IS–10 Laparoscopic-Vaginal Radical Hysterectomy (LVRH) with Paraaortic and Pelvic Lymphadenectomy: Surgical Morbidity and Short-term Follow-up

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To introduce AMC method and treatment guideline for laparoscopic/vaginal modified radical (Type II) and radical hysterectomy (Type III) with retropertitoneal lymphadenectomy and to quantify morbidity and determine the risk of recurrence in patients consented to undergo these surgeries. From September 1997 to July 2000, total 57 patients with cervical cancer (58 with FIGO stage Ib and 29 with FIGO stage Ib) were consented to undergo LVMRH and LVRH using monocord coagulation and endoscopic staplers. All had tumor mass less than 3 cm in diameter and most of them were relatively young and thin.

The average age of the patients was 43.2 years (range: 28–61) for LVMRH group and 44.7 years (range: 31–64) for LVRH group. The average operative time for LVMRH group and LVRH group was 367 minutes (range: 120–265) and 207 minutes (range: 105–330), respectively. The mean hemoglobin change after operation was 1.7 g/dl (range: 0–6.45) and 2.1 g/dl (range: 0.2–4.8) and the average amount of blood transfused was 0.5 unit (range: 0–5) and 0.7 unit (range: 0–5), respectively. The average number of lymph node dissected was 250 (range: 9–42) and 28.8 (range: 12–67), respectively, while there was no positive lymph node in LVMRH group, 3 cases of LVRH group showed positive node (10.3%). The average hospital stay was 90 days (range: 5–17) and 127 days (range: 6–36). There were only 3 cases of lymphocytic formation as postoperative complication in LVMRH group. In LVRH group, there were 2 cases of bladder injury, 1 case of ureter injury, 3 cases of great vessel injury as intraoperative complication, and 4 cases of lymphocytosis formation, 1 case of bladder dysfunction as postoperative complication.

Two patients underwent laparotomy to control bleeding sites, and those were excluded from total case. Median follow-up duration was 22 months (range: 8–57) and 24 months (range: 5–36) in LVMRH group and LVRH group, respectively. All in clinical NED state in LVMRH group, and 1 case (1.6%) recurred in LVRH group during follow-up. Laparoscopic/vaginal radical hysterectomy can be successfully completed in patients with early-stage cervical cancer with acceptable morbidity and excellent short-term follow-up results.

IS–11 Swelling-activated Taurine and K+ Transport in Human Cervical Cancer Cells: the Association with Cell Cycle Progression

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Objectives: To investigate the swelling-activated taurine and K+ transport in human cervical cancer cells under various culture conditions, if the progression of cell cycle is accompanied by differential activities of swelling-activated transport pathways. Methods and Results: The distribution of cell cycle stage is determined by fluorescence-activated cell sorting (FACS). Hypoxia induces taurine efflux, which is sensitive to taminofen and 5-nitro-2-(3-phenylpropylaminio) benzoic acid (NPPB). Cell swelling also induces both Cl– dependent and independent K+ (Rb+) efflux, which is presumably mediated by KCl cotransport (KCC) and a Ca2+ - activated K+ channel, respectively. Cell cycle arrest in G0/G1 is accompanied by a remarkable decrease in the activity of swelling-activated taurine efflux, from 0.20±0.007 min–1 to 0.028±0.002 min–1 (n = 6). The activities of swelling-activated taurine efflux recover progressively on re-entry into the cell cycle. After removal of aphidicolin and culture with 10% fetal calf serum for 10h, the swelling-activated taurine efflux rate constant increased significantly from 0.026±0.002 min–1 to 0.035±0.002 min–1 (n = 6). After 24h release from aphidicolin, the efflux rate constant further increased to 0.195±0.006 min–1 (n = 6), which was not significantly different from that in normally proliferating cells. In contrast to the differential activities of swelling-activated taurine transport, swelling-activated K+ (Rb+) transport is independent of the progression of cell cycle. Most importantly, pharmacological blockade of swelling-activated taurine efflux by taminofen or NPPB causes proliferating cervical cancer cells to arrest in G0/G1, suggesting that the activity of this efflux is associated with G1/S checkpoint progression. Conclusion: This result provides new information of swelling-activated taurine efflux in the regulation of cell cycle clock of human cervical cancer cells.

IS–12 Imprinting and Expression of Insulin-Like Growth Factor-II and H19 in Cervical Carcinoma

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Loss of imprinting at insulin-like growth factor-II (IGF2) and H19 gene is known to be associated with the developments of several cancers. In this study, we aimed to establish the role of genomic imprinting and expression of IGF2 and H19 in cervical cancer. The imprinting status of IGF2 and H19 genes was examined in 38 Korean cervical carcinoma patients by PCR/RFLP. RT-PCR was employed to study the expression of IGF2 and H19.

Expression of IGF2 and H19 genes was detected in all heterozygous cases informative for both polymorphisms. LOH of IGF2 was detected after digestion with Apal and LOH of H19 was observed after treatment with HinII. Overall, LOH of IGF2 was found in 3 (15%) cervical carcinoma tissues and LOH of H19 in 2 cases (20%). Of 15 cervical carcinomas and SCC showing heterozygosity for IGF2, 4 (27%) samples exhibited LOI while monoallelic expression was maintained in other tumors. Of the 16 tumors with no LOH for H19, 6 (38%) tumors exhibited LOI by monoallelic expression. Notably, two samples showed LOI for both I19 and IGF2 genes.

In cervical carcinoma tissues, we observed that IGF2 and H19 genes could be abnormally expressed, suggesting that the abnormality of IGF2 and H19 gene expression might be associated with the progression of the disease.