Chemoradiotherapy with local hyperthermia vs. chemoradiotherapy alone in locally adv. cervix cancer patients

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Introduction: Among all the patients with newly diagnosed cervix cancer more than a half have locally advanced tumors and most of them are suitable for chemoradiotherapy (CRT) as a definitive treatment. Local radiofrequency hyperthermia (LRH) is known to be a potent chemo- and radiosensitizer, that is why we wished to combine it with CRT for locally advanced cervix cancer (LACC) patients for whom this combination appeared to be the only appropriate method of curative treatment in most of cases. So far there has never been a trial comparing the results of CRT with or without heat in LACC patients. The main aims of the study were to evaluate the feasibility of LRH and CRT, the complications rate and the efficacy of such combination in the definitive treatment of LACC patients including local control rate, disease free survival and event free survival.

Methods: Between October 2012 and November 2014, 37 patients with LACC were treated with CRT in combination with LRH. Twenty nine of them had stage IIb and 8 – stage III according to FIGO staging system. The total dose of radiotherapy given to the point A varied between 74 and 80 Gy. All the patients received cisplatin 40 mg/m2 weekly within the whole course of radiotherapy (4-6 i.v. infusions). LRH was delivered two or three times per week within 1 hour prior to radiotherapy, the median number of sessions – 8 (range 5-10).

Results: All 37 patients completed the treatment planned. Average follow up period was 17.6 months (range from 10 to 27 months).The major acute complications registered were: skin reaction grade I-II (6 pts), vaginal mucositis grade I-II (16 pts), leucopenia grade I-II (4 pts), bladder toxicity grade I-II (3 pts), and bowel toxicity grade I-II (8 pts).

One patient revealed grade III skin toxicity, and 1 experienced grade III leucopenia but this was considered as acceptable. Eleven women did not demonstrate any acute complication at all. Three cases of late toxicity (ulceration of rectum and erosive sigmoiditis or proctitis) were detected within the follow-up period without signs of local progression. The objective clinical response evaluation was performed minimum in two months after the treatment course completion and included physical examination, pelvic and abdominal ultrasound or computed tomography. Clinical complete response was registered in 30 (81.1 %) patients; 13.5 % showed partial response and all of them (as well as the majority of patients with stage III LACC) proceeded for further chemotherapy. Two patients (both young women, about 30 years old) showed local progression and metastatic disease at 2 months follow up.

Six patients progressed afterwards, however only 2 of them revealed local relapse, while the other 4 demonstrated distant metastases (liver, bones, lungs or paraaortic lymphnodes) within 5-13 months after treatment completion. Two patients died, one in 5 months after the treatment completion, the second survived within 23 months. Local control at one year was 89.2 %, 1-year event-free survival – 83.8 %, and overall survival at one year was 97.3 %. There were no episodes of profuse bleeding during the treatment period. The majority of patients noted fast pain relief onset after the first LRH sessions.

Conclusions: The combination of LRH and CRT is well tolerated without increase in typical acute and late complications rate and can be safely applied for the curative treatment of LACC patients. The treatment leads to positive clinical response development in an absolute majority of patients with good local control and overall survival rates at one year. The first comparison results with chemoradiotherapy of LACC alone will be presented at symposium session.