Conclusions: A modest surgical interval prolongation more than 6 weeks was safe, did not negatively affect response or oncologic outcomes and was identified as independent favourable prognostic factor for overall survival. Randomized studies are justified to explore more significant delayed time intervals between neoadjuvant CRT and surgery in LARC.

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Clinical outcome and toxicity of 3D-conformal radiotherapy combined with chemotherapy for gastric cancer

K. Glinski[1], E. Wasilewska-Tesluk[1], M. Rucinska[1], E. Cieslak-Zeranska[1], B. Czeremszynska[1], K. Osowiecka[1], L. Kepka[1]
[1]*Warmia & Mazury Oncology Center, Radiation Oncology, Olsztyn, Poland*

Purpose/Objective: To evaluate retrospectively efficacy and toxicity of adjuvant radio-chemotherapy in patients with gastric cancer and to relate these results to the outcome of landmark INT0116 study that was criticized because of high toxicity and poor treatment compliance.

Materials and Methods: A total of 102 patients, who underwent postoperative fluorouracil (5-FU)-based radio-chemotherapy in our institution between 2004 and 2010 for stage IB-IV (AJCC 6th ed.) gastric cancer were selected. Stage distribution was as follows: IB-5 (5%), II-32 (31%), III-49 (48%), and IV-14 (14%). There were 96% R0 resections; 15% of the patients had a D2 resection. Radiotherapy to 45Gy was defined individually and delivered with 3D conformal technique. Chemotherapy was carried out during the first four and last three days of RT with continuous infusion of 5-FU (400mg/m2/day) and Leucovorin. Patients received additional three cycles of chemotherapy of 5-FU(425mg/m2/d), one before and two after radio-chemotherapy. Acute hematological and gastro-intestinal toxicity was evaluated according to the CTC v3.0 scale.

Results: Seventy-four (72.5%) and 98 (96%) patients received all five planned cycles and completed radiotherapy, respectively. The 3- and 5-year overall survival (OS) rates were 57% and 48%, respectively. Multivariate analysis showed that variables significantly affecting OS were pT3-T4, pN2-3, R1 resection and female. Only 2% of patients experienced grade 3 gastro-intestinal toxicity; 7% had grade 3 or higher hematological toxicity.

Conclusions: We demonstrated improved treatment tolerance, compliance, OS of adjuvant radio-chemotherapy for gastric cancer in comparison with INT0116 study. Conformal radiation techniques might have contributed to this improvement.

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Methylenetetrahfolate reductase C677T polymorphism in patients treated for locally advanced rectal cancer

K. Boudaoud[1], S. Taleb[2], A. Brihmat[2], L. Beddar[3], K. Sifi[4], T. Filali[5], A. Djemaa[6], N. Abadii[7]
[1]*Scientific Research Laboratory of Molecular Biology and Genetics Faculty of Medicine University Constantine 3, Department of Radiation Oncology, Constantine, Algeria*
[2]*Faculty of Medicine University Constantine 3, Department of Radiation Oncology, Constantine, Algeria*
[3]*Scientific Research Laboratory of Molecular Biology and Genetics Faculty of Medicine University Constantine 3., Laboratory of Pathological Anatomy and Cytology, Constantine, Algeria*
[4]*Scientific Research Laboratory of Molecular Biology and Genetics Faculty of Medicine University Constantine 3., Biochemistry Department, Constantine, Algeria*
[5]*Scientific Research Laboratory of Molecular Biology and Genetics Faculty of Medicine University Constantine 3., Medical Oncology, Constantine, Algeria*
[6]*Faculty of Medicine University Constantine 3., Radiation Oncology, Constantine, Algeria*
[7]*Scientific Research Laboratory of Molecular Biology and Genetics Faculty of Medicine University Constantine 3., Molecular Biology and Genetics, Constantine, Algeria*

Purpose/Objective: Preoperative radiation therapy combined with fluoropyrimidine is the standard treatment for locally advanced rectal cancer. However, there is a large individual difference or variation in tolerance and therapeutic efficiency. The genetic polymorphisms represent one of the major causes in this variation. The aim of our study is to analyze the relationship between gene polymorphism of the Methylenetetrahydrofolate reductase 'MTHFR' (important enzyme in floropyrimidine metabolism) tolerance and the therapeutic efficiency of fluoropyrimidine in patients with locally advanced rectal cancer.

Materials and Methods: Between December 2011 and November 2013, 52-blood samples were realized for DNA extraction, MTHFR gene polymorphism were determined by polymerase chain reaction restriction fragment length polymorphism PCR-RFLP in patients with stage II and III histologically proved rectal cancer there were 21 women and 31 men with a median age 50.8 years, range 23-70 years. The tumor was located in lower rectum in 56% of cases. 30 patients had stage III. Preoperative radiation therapy was delivered in all patients with a total dose of 45 Gy, associated at fluoropyrimidine (5Fluorouracil + folic acid in 30 patients, Capecitabine in 22 patients), followed by surgical resection in eight weeks in all patients. The treatment tolerance was evaluated according to the NCI-CTC version 3 toxicity criteria. Therapeutic efficiency was evaluated by histopathological postoperative specimen examination. Kaplan-Meyer survival curves were defined for each polymorphism in our series.

Results: The distribution of the three genotypes CT, CC and TT were respectively (32.6%, 48% and 19.2%). The risk of developing severe (grade 3-4) toxicity was observed in 677 CC (9,6%), 677CT(7,6%) and 677TT (3,8%). T-level downstaging after neoadjuvant treatment was demonstrated in 63.3% of cases in patients with 677TT genotype, it was 40% in 677CT genotype and 58.8% in 677CC genotype. No association is observed between C677T polymorphism and survival (log rank= 0.02, p = 0.99).

Conclusions: In spite of the limited patient number, our study shows that the MTHFR 677 TT genotype can have a protective role of fluoropyrimidine toxicity, and it can be a predictive factor in therapeutic efficiency. This study will be continued, in order to include more patients and to analyze the second polymorphism in MTHFR gene (1298 A>C).