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KARCINÓM PRSNÍKA

Sevcikova K, Vertakova-Krakovska B, Spanik S. Neoadjuvant Treatment in Patients with HER2-Positive Breast Cancer. ISRN Oncol. 2013 May 23; 2013: 362467

Approximately 20%-25% of patients with breast cancer demonstrate amplification of the human epidermal receptor type 2 (HER2) gene, resulting in an overexpression of the HER2 receptor. This overexpression is associated with aggressive disease, relatively poor prognosis, and worse clinical outcomes. Neoadjuvant therapy is the standard treatment in patients with locally advanced, inflammatory, or inoperable primary breast cancer. It is generally used to downstage the tumors and therefore to improve surgical option including breast-conserving surgery rather than mastectomy. It has been confirmed that patients with pathological complete response (pCR) to neoadjuvant treatment have better disease-free survival (DFS) and overall survival (OS). Neoadjuvant treatment can also serve as in vivo test of sensitivity to the used therapeutic regimen. The preferred neoadjuvant approach to patients with HER2-positive breast cancer is a sequential anthracycline-taxane-based chemotherapy in combination with trastuzumab. Addition of other anti-HER2 agents has increased pCR rate up to 75% and will probably become a new therapeutic direction. In the first part of this paper, we summarize the information about HER2-positive breast cancer, the various treatment possibilities, and the results of the major neoadjuvant trials. The second part focuses on the data concerning the importance of pCR and the potential risk of cardiotoxicity associated with this treatment.

KARCINÓM PĽÚC

Letkova L, Matakova T, Musak L, Sarlinova M, Krutakova M, Slovakova P, Kavcova E, Jakusova V, Janickova M, Drgova A, Berzinec P, Halasova E. DNA repair genes polymorphism and lung cancer risk with the emphasis to sex differences. Mol Biol Rep. 2013 May 15.

Polymorphisms in nucleotide and base excision repair genes are associated with the variability in the risk of developing lung cancer. In the present study, we investigated the polymorphisms of following selected DNA repair genes: XPC (Lys939Gln), XPD (Lys751Gln), hOGG1 (Ser326Cys) and XRCC1 (Arg399Gln), and the risks they present towards the development of lung cancer with the emphasis to gender differences within the Slovak population. We analyzed 761 individuals comprising 382 patients with diagnosed lung cancer and 379 healthy controls. Genotypes were determined by polymerase chain reaction/restriction fragment length polymorphism method. We found out statistically significant increased risk for lung cancer development between genders. Female carrying XPC Gln/Gln, XPC Lys/Gln+Gln/Gln and XRCC1 Arg/Gln, XRCC1 Arg/Gln+Gln/Gln genotypes had significantly increased risk of lung cancer corresponding to OR = 2.06; p = 0.04, OR = 1.66; p = 0.04 and OR = 1.62; p = 0.04, OR = 1.69; p = 0.02 respectively. In total, significantly increased risk of developing lung cancer was found in the following combinations of genotypes: XPD Lys/Gln+XPC Lys/Lys (OR = 1.62; p = 0.04), XRCC1 Gln/Gln+hOGG1 Ser/Ser (OR = 2.14; p = 0.02). After stratification for genders, the following combinations of genotype were found to be significant in male: XPD Lys/Gln+XPC Lys/Lys (OR = 1.87; p = 0.03), XRCC1 Arg/Gln+XPC Lys/Lys (OR = 4.52; p = 0.0007), XRCC1 Arg/Gln+XPC Lys/Gln (OR = 5.44; p < 0.0001). In female, different combinations of the following genotypes were found to be significant: XRCC1 Arg/Gln+hOGG1 Ser/Ser (OR = 1.98; p = 0.04), XRCC1 Gln/Gln+hOGG1 Ser/Ser (OR = 3.75; p = 0.02), XRCC1 Arg/Gln+XPC Lys/Gln (OR = 2.40; p = 0.04), XRCC1 Arg/Gln+XPC Gln/Gln (OR = 3.03; p = 0.04). We found out decreased cancer risk in genotype combinations between female patients and healthy controls: XPD Lys/Lys+XPC Lys/Gln (OR = 0.45; p = 0.02), XPD Lys/Gln+XPC Lys/Lys (OR = 0.32; p = 0.005), XPD Lys/Gln+XPC Lys/Gln (OR = 0.48; p = 0.02). Our results did not show any difference between pooled smokers and non-smokers in observed gene polymorphisms in the association to the lung cancer risk. However, gender stratification indicated the possible effect of heterozygous constitution of hOGG1 gene (Ser/Cys) on lung cancer risk in female non-smokers (OR = 0.20; p = 0.01) and heterozygous constitution of XPC gene (Lys/Gln) in male smokers (OR = 2.70; p = 0.01).

Hlinkova K, Babal P, Berzinec P, Majer I, Mikle-Barathova Z, Piackova B, Ilencikova D. Evaluation of 2-year experience with EGFR mutation analysis of small diagnostic samples. Diagn Mol Pathol. 2013, 22: 70-5

Mutation analysis of the epidermal growth factor receptor (EGFR) gene is an essential part of the diagnostic algorithm in patients with metastatic or recurrent non-small cell lung cancer (NSCLC). Small biopsies or cytology specimens represent >80% of the available diagnostic material. EGFR mutation analyses were realized on 835 samples (675 cytology specimens, 151 formalin-fixed paraffin-embedded blocks, 5 tumors, and 4 pleural effusions). EGFR mutation analysis was performed by high-resolution melting analysis in combination with mutant-enriched polymerase chain reaction and sequencing analysis. Because of increased risk of inaccuracy in histology diagnosis of small specimens, all subtypes of NSCLC were analyzed. EGFR mutations were detected in 83 cases (10%). EGFR mutation testing failed in 5% (42/835) and was associated with poor cellularity, low percentage of tumor cells, and bad quality of DNA. Although 281 samples were evaluated as insufficient material (poor cellularity and/or unrepresentative tumor content), mutation rates were 7%. Although only adenocarcinomas or NSCLC-not otherwise specified are recommended for EGFR mutation testing, EGFR mutations in 11% of the large

cell carcinomas and 4% of the squamous cell carcinomas were observed. Our results indicate that defined algorithm for EGFR testing of small diagnostic samples is sensitive, fast, and suitable even for samples with poor cellularity. The results of this testing should be evaluated depending on tumor content and DNA quality for each sample individually. At the conclusion of our results, we recommend to realize EGFR mutation analysis of small diagnostic samples regardless of the histologic subtypes of NSCLC.

GYNEKOLOGICKÉ MALIGNITY

Kim K, Hernlund E, Hernadi Z, Révész J, Pete I, Szánthó A, Bodnar L, Madry R, Timorek-Lemieszczuk A, Bozanovic T, Vasovic S, Tomasevic Z, Zivaljevic M, Pazin V, **Minárik T, Garanová H, Helpianska L, Justo N. Treatment patterns, health care utilization, and costs of ovarian cancer in Central and Eastern Europe using a Delphi panel based on a retrospective chart review. Int J Gynecol Cancer. 2013, 23: 823-832.**

Objectives: Despite the considerable disease burden of ovarian cancer, there were no cost studies in Central and Eastern Europe. This study aimed to describe treatment patterns, health care utilization, and costs associated with treating ovarian cancer in Hungary, Poland, Serbia, and Slovakia.

Methods: Overall clinical practice for management of epithelial ovarian cancer was investigated through a 3-round Delphi panel. Experts completed a survey based on the chart review (n = 1542). The survey was developed based on clinical guidelines and the International Federation of Gynecology and Obstetrics Annual Report. Means, ranges, and outlier values were discussed with the experts during a telephone interview. Finally, consensus estimates were obtained in face-to-face workshops. Based on these results, overall cost of ovarian cancer was estimated using a Markov model.

Results: The patients included in the chart review were followed up from presurgical diagnosis and in each phase of treatment, that is, surgical staging and primary surgery, chemotherapy and chemotherapy monitoring, follow-up, and palliative care. The 5-year overall cost per patient was €14,100 to €16,300 in Hungary, €14,600 to €15,800 in Poland, €7600 to €8100 in Serbia, and €12,400 to €14,500 in Slovakia. The main components were chemotherapy-associated costs (68%-74% of the total cost), followed by cost of primary treatment with surgery (15%-21%) and palliative care (3%-10%).

Conclusions: Patients with ovarian cancer consume considerable health care resources and incur substantial costs in Central and Eastern Europe. These findings may prove useful for clinicians and decision makers in understanding the economic implications of managing ovarian cancer in Central and Eastern Europe and the need for innovative therapies.

POPDORNÁ LIEČBA

Mego M, Holec V, Drgona L, Hainova K, Ciernikova S, Zajac V. Probiotic bacteria in cancer patients undergoing chemotherapy and radiation therapy. Complement Ther Med. 2013, Aug 23

Abstract: Background: Probiotics are live microorganisms, which as drugs or food supplements help to maintain health beneficial microbial balance in the digestive tract of a human or other host. Probiotics by their properties may help strengthen homeostasis and thus reduce side effects associated with cancer treatment. Experimental evidence suggests that probiotics might have beneficial effect on the toxicity of anticancer therapy.

Methods: A computer-based literature search was carried out using PubMed (keywords: probiotic" and „lactic acid bacteria" in association with the search terms „cancer" or „oncology" or „chemotherapy" or „radiation"); data reported at international meetings were included.

Results: Probiotics might have beneficial effects on some aspects of toxicity related to anticancer treatment especially radiation therapy. However, reported trials vary in utilized probiotic strains, dose of probiotics and vast majority of them are small trials with substantial risk of bias. Despite limited data, it seems that probiotic bacteria as live microorganisms could be safely administered even in the setting of prolonged neutropenia.

Conclusions: Current evidence supporting probiotic use as adjunctive therapy to anticancer treatment is limited, especially in cancer patients treated with chemotherapy. Well designed clinical trials are needed to find true role of probiotics in oncology.

ABSTRAKTY A POSTERY ZO ZAHRANIČNÝCH KONFERENCIÍ

GASTROINTESTINÁLNE MALIGNITY

Vanda Usakova, Katarina Sevcikova, Stanislav Spanik. Surgical treatment of metastases and its impact on prognosis in patients with metastatic colorectal carcinoma. ESMO 15th World Congress on Gastrointestinal Cancer, **Barcelona, Spain, 3-6 July 2013 (poster)**

Tomas Salek, Zuzana Hlavata, Iveta Andrezalova Vochyanova, Jozef Dolinsky, Jozef Mardiak, Peter Pichna. Capecitabine in combination with radiotherapy as a neoadjuvant treatment in locally advanced rectal cancer: results of a phase II trial ESMO 15th World Congress on Gastrointestinal Cancer, Barcelona, Spain, 3-6 July 2013 (poster)