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Abstracts

Practice management

OLIGOMETASTASES: A NEW REALITY IN THE THERAPY OF THE CANCER

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Metastasis is the principal cause of cancer death and morbidity in patients affected by cancer. Treatment of metastasis is one of the objective principals of the therapy against the cancer. The term of oligometastases defines the presence of limited metastasis both in the number (<5 nodules and <5 cm in total) in the location (1 organ). To the moment many survivors of solitary metastasis exist, especially liver and pulmonary, advances in molecular oncology and imaging have allowed a precocious diagnosis of the same. The therapeutic options of the oligometastases can be different form the surgical excision, the ablation with stereotactic radiosurgery to the target therapy or the immunotherapy: all the options are able to eradicate the lesions. Recently, the rapid development of new technical, very more conform, what the Image-Guided Radiation Therapy (IGRT) and the Intensity Modulated Radiation Therapy (IMRT), have allowed the administration of few fractions with high doses, highly tailored to the lesions. With concern the radiotherapy, the oligometastases treatment involved numerous step: target definition and localisation, treatment planning, verification. evaluation and delivery that ask for greater accuracy and precision. In conclusion, in the treatment of the oligometastasis the integration of different methodic therapeutics, using the spatial cooperation, can represent the new frontier of care in the patients affections from small number of metastasis.

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PHARMACOGENETICS IN ONCOLOGY

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The Human Genome Project led to the discovery of DNA sequence variants, the majority of them being SNPs and gene amplifications. The potential influence of DNA variation on the activity and/or adverse reaction of cancer chemotherapy are being investigated. Pharmacogenetics and pharmacogenomics are gaining momentum and their application to cancer treatment is of high priority. The number of studies reporting a relationship between DNA sequence variants and cancer treatment outcome are increasing in number. In particular, the following associations were found: DPYD gene mutations and severe 5-FU toxicity,[1] EGFR mutations and responsiveness of NSCLC to gefitinib,[2] ERCC1 polymorphisms and severe drug toxicity in NSCLC patients,[3] genetic variants in the UGT1A1 gene and severe neutropenia by irinotecan,[4] MTHFR genotype and treatment response in paediatric ALL,[5] TS and MTHFR gene polymorphisms in normal tissue and 5-FU sensitivity,[6] TPMT genotype and early treatment response to 6-MP in childhood ALL[7] and CDA genotype and response to gemcitabine in NSCLC.[8] The next step in pharmacogenetic research should be the validation of these findings in randomised prospective trials, specifically designed to compare the outcome of treatment selected on the basis of patient's genotype (normal tissue *versus* tumour) *versus* standard approach. In conclusion, the improvement in genotyping technologies and the availability of a high-density SNP maps, combined with efficient and cost-effective analytical methods, open the possibility of fulfilling the promise of reducing the toxicity and personalise the treatment offered to cancer patients.

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