

## Lung Cancer in Terms of Occupational and Social Disease

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Apart from clear association with tobacco, other factors of importance for prevention, early diagnosis and treatment of lung cancer have been offered little attention. We here present a case-control study focusing on social class and comparing lung cancer patients with those with large bowel cancer. A written questionnaire was completed by 248 consecutive patients with lung cancer and 244 patients with large bowel cancer. Both groups were comparable according to gender and age distribution. Data on place of birth, education, smoking history, diet and alcohol intake, body weight and height,

profession, housing conditions and family income were analysed. As expected, there were significant differences between the two groups regarding smoking status. Patients with lung cancer had a significantly higher proportion of immigrants. The proportion of patients working as industrial workers or in other polluted working environment was also significantly higher among lung cancer patients, as compared to large bowel patients. This survey confirms that lung cancer is often a disease of low social class and points to polluted working environment as a co-factor in the etiology of the disease.

## Preoperative radiochemotherapy for patients with unresectable stomach carcinoma

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Radical resection is the basic treatment for stomach carcinoma. At the time of diagnosis, the disease is unresectable in nearly 50% of patients. It is known that preoperative radiochemotherapy can downstage the tumor and thereby allowing higher probability of radical resection and improving survival of patients. In 2006 preoperative radiochemotherapy was started in Slovenia for patients with non-metastatic unresectable stomach tumors. Three-dimensional conformal treatment planning with computer tomography and concomitant

chemotherapy with 5-FU and cisplatin were used. So far, 36 patients received the above-mentioned treatment. In nineteen patients who were operated on so far, radical resection was performed in 12 (63%). In 3 (16%) patients microscopic residual disease (R1 resection) was found, and in 4 (21%) patients, only palliative surgery was performed. A detailed analysis of treatment success will be performed after obtaining the treatment results of greater number of treated patients.

## Malignant tumors of major salivary glands

Mirjana Rajer and Primož Strojjan

Malignant tumors of major salivary glands are a rare and heterogeneous group of diseases. On average, 8 people in Slovenia are diagnosed with this disease every year. In the article, anatomy, epidemiological and etiological characteristics as well as diagnostic procedures and treatment principles applied in these tumors, are

presented. Furthermore, we reviewed modes and results of therapy of malignant tumors of major salivary glands as conducted at the Institute of Oncology Ljubljana during 1980-2004. They were compared with results of similar institutions from elsewhere in the world.

## Second Cancers after Radiotherapy

Ajra Šečerov and Hotimir Lešničar

The incidence of second cancers after radiotherapy is increasing in the last years as a result of a higher number of long term-survivors after treatment and as a result of a longer follow-up. The risk of radiation-induced second cancers is much greater among young patients and children. The majority of second cancers occur in the

organs and tissues in the high-dose volume; however, some may appear in the low dose volume. There are at least three different biological mechanisms leading to second cancers, depending on dose distribution and age of the irradiated patient.

## Recommendations for the Use of Erythrocyte Colony Stimulating Factors in Systemic Treatment of Cancer

Mojca Humar and Tanja Čufer

Erythrocyte colony stimulating factors (erythropoietins) are natural proteins, mainly produced by kidneys. They take part in the regulation of red blood cells production. There are many causes for the development of anemia in cancer patients; the most frequent is anemia of chronic disease, which is normocytic and normochromic and results from a poor response to erythropoietins and invalid hemoglobin iron uptake. According to some studies, anemia correction increases quality of life (QOL) and decreases tumor hypoxia, thereby leading to a more efficient systemic and irradiation therapy. After the initial enthusiasm on synthetic erythropoietins (EPA), which showed to be effective in improving QOL in anemic cancer patients, some big trials published in the last years showed more side effects, especially thrombotic complications and a trend towards a worse survival in patients on EPA. This led to strongly curtailed recommendations for

their use. Today the use of EPA for anemia correction is recommended only for cancer patients on specific cancer treatment without curative intent. The drug is initiated only with symptomatic anemia, with careful titration of dose to a target Hb of 120 g/L, EPA should not be used with higher Hb values. A thoughtful consideration should be given to the use of EPA in the patients with a risk of thrombotic events. We still do not know if slightly worse survivals are the consequence of tumor cell growth stimulation or of more side effects, especially thrombotic complications with EPA usage. The final answer and also data on the optimal use of EPA in cancer patients will be provided, hopefully, by the results of ongoing prospective clinical trials.

## Procalcitonin in clinical practice

M. Jereb, M. Derganc, B. Kremžar and L. Kitanovski

Procalcitonin (PCT) is increasingly recognized as an important diagnostic tool in clinical practice. High plasma levels are observed in patients with severe sepsis or septic shock; moreover, there is a good correlation between PCT, inflammation activity and severity of sepsis. Local limited bacterial infections induce only a slight increase of PCT serum concentration. On the other hand, viral infections, neoplastic

and autoimmune disorders usually do not have any influence on PCT serum level. Non-specific induction of PCT synthesis may occur after major surgery, multiple trauma or in newborn infants during the first days of life. Determination of PCT has diagnostic, prognostic and in some situations also therapeutic value.

## **Germ-Cell Tumors: New Improved Treatment Method of Testicular Cancer Patients**

Breda Škrbinc

Germ cell tumors (testicular cancer), though a rare cancer type in general, are one of the most common cancers of young adult men aged between 20 and 40 years. Treatment of germ cell cancer is potentially successful, even in metastatic settings, if the diagnosis and treatment are performed by experienced professionals. The treatment of localized disease is conservative. After orchidectomy which is the initial therapeutical as well as a diagnostic procedure, the patients are thoroughly followed by watchful waiting. Adjuvant treatment in the form of adjuvant chemotherapy, radiotherapy or selective retroperitoneal lymphadenectomy is performed under specific circumstances. Patients who during watchful waiting develop metastatic disease (in clinical practice also metastases in regional lymph nodes are

considered as a metastatic disease) are classically treated according to prognostic factors which consist of histological type (seminoma vs. nonseminoma germ cell tumors) of tumor, clinical stage of the disease and the level of serum tumor markers  $\alpha$ -fetoprotein (AFP),  $\beta$ -choriognadotropin ( $\beta$ -HCG) and LDH. Metastatic disease is initially treated by combination chemotherapy which, in the settings of metastatic seminoma and limited metastatic non-seminoma germ cell tumors, could be the ultimate treatment modality, while the patients with metastatic non-seminoma germ cell tumors with residual metastases after the normalization of serum tumor markers need resection of residual metastases.

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## **Nutrition during Palliative Care**

Jernej Benedik

The decision to withhold life sustaining measures is always difficult. Countless discussions, suggestions, recommendations by ethical committees offer some support or moral compass in making these decisions; however, in the end, one always finds himself torn between one's own conscience, patient, patient's family and science.

The guidelines that apply to critically ill rarely apply to palliative care. Artificial hydration and nutrition primarily attempt to satisfy basic human needs for food and drink. As such they are often regarded as easing suffer rather than sustaining life.

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## **Hypodermoclysis: A Safe, Comfortable, Functional and Low-Cost Method of Parenteral Hydration**

Jožica Jelen Jurič and Jernej Benedik

In clinical practice, hypodermoclysis was first used in the forties of the earlier century in the treatment of pediatric patients for dehydration. It is a safe, comfortable and low-cost method for replacing an excessive loss of body water as well as for administering some drugs. It is primarily used in non-urgent care. Moreover, its application was also recommended in the last edition ESPEN guidelines. The method can be used also for subcutaneous administration of various

drugs, e.g. antibiotics and also furosemide. It is important to select an appropriate fluid (it has to contain salt). Major disadvantages of the method are limited quantity of the fluid to be administered per day (3 liters) and local oedema. Hypodermoclysis is, in addition to oral administration, also a method of choice for drug administration in palliative care of patients.

## Angiogenesis Inhibitors in Brain Tumor Treatment

Janja Ocvirk

Considering the histology of malignant gliomas and their response to treatment, they are regarded as a heterogenous group of brain tumors. Standard treatment is a combination of irradiation and concomitant chemotherapy with temozolomide. A new approach to the treatment of malignant gliomas is antiangiogenic strategy because these tumors are highly vasculated. Preclinical data show that the growth of these tumors depends on the onset of new blood vessels which is stimulated by various factors, such as VEGF (vascular endothelial growth factor), produced by the tumor itself. Bevacizumab is a humanized monoclonal antibody that binds to VEGF. It has

been proved to be efficient the treatment of numerous solid tumors. Moreover, bevacizumab is efficient also in the treatment of glioblastomas, applied as monotherapy or in combination with cytostatics, which has been confirmed by the results of several clinical studies. In addition to its efficiency in the treatment glioblastomas, it has also been found to have the capacity of improving the patients' cognitive functions, reducing their need for corticosteroids, thereby also improving their quality of life. Bevacizumab offers a new potential in the treatment of recurrent or advanced glioblastoma.

## New Promises of Cytopathologic Diagnostics of Bladder cancer by Using UroVysion™

Margareta Strojjan Fležar and Irena Srebotnik Kirbiš

Cytopathologic examination of the urine and bladder washing is a standard method for the detection of primary bladder cancer in symptomatic patients or in patients with hematuria. The method is also very useful to follow the patients after treatment in order to detect recurrence of bladder cancer which occurs in a significant percentage of patients.

Cytopathologic examination is highly accurate for the diagnosis of high grade urothelial carcinoma and carcinoma in situ. However, the method is recognized as being unreliable for the detection of low grade urothelial neoplasms. Obvious cellular and nuclear morphological signs of malignancy can be reliably recognized in high grade papillary, invasive and in situ urothelial carcinoma. Thus, less pronounced cellular atypia pose everyday diagnostic problems and atypia of low grade papillary neoplasms cannot be always reliably

differentiated from atypia of some benign and post-treatment reactive changes.

In the last decade a number of new urinary markers have been developed to overcome low sensitivity of urinary cytology. Although most of these tests are highly sensitive, they have lower specificity than cytology. The UroVysion test seems the most promising among the new tests. By the method of multitarget fluorescent in situ hybridisation (FISH), the test can detect several cytogenetic changes characteristic for different grades of bladder cancer. Therefore, the UroVysion test is useful for assessing neoplastic nature of cytologically undetermined atypical cells. The most recent reports claim that the UroVysion test can even detect bladder cancer before morphological changes are diagnosed in urine cytology.

## Determination of Lymphoid Proliferation Clonality – A New Method in Comparison to the in House Method

Petra Cerkovnik, Ira Kokovič, Verica Prevodnik Kloboves and Srdjan Novaković

At the Department of Molecular Diagnostics, a new method for determining lymphoid proliferation clonality has been introduced in lymphoma diagnostics. The method is based on PCR and on the use of various consensus primers. It is validated and registered for the use in clinical diagnostics (CE-marked method). Our measurements

confirmed that the use of extended number of primers improved the sensitivity of determining the lymphoid clonality of B-lymphocytes and T-lymphocytes by 23.1% and 14.3%, respectively. Both methods may, theoretically, be used in determining monoclonal population of lymphocytes in 84.6% of B- and 85.8 of T-lymphomas.