

A-III Oral Cancer

1. Prognostic Indications of Survival

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Extensive analyses of TNM-classifications of squamous cell carcinoma (SCC) of the lips, oral cavity and oropharynx have shown severe shortcomings in prognostic differentiation of these tumours. This implies the TNM-system only to be descriptive. The TNM-system developed by DENOIX between 1942–1953 was a decisive step forward to a systematic approach of malignant tumours. Extensive analyses of TNM-classifications of SCC the lips, oral cavity and oropharynx, however, have shown severe shortcomings in the prognostic differentiation of these tumours, which implies that the TNM-system can only be called descriptive. To provide a prognostic instrument that should allow maximum objective and reliable prognosis a "Treatment-Dependent Prognostic-Index" ("TPI") on the basis of the "Retrospective DÖSAK-Study on carcinomas of the oral cavity" has been developed by Platz, Fries and Hudec (1).

TPI is being increasingly used in clinical cancer research. When TPI was critically tested on the basis of the data from the "Prospective DÖSAK-Study on Squamous Cell Carcinomas of the Lips, Oral Cavity and Oropharynx" (2) it turned out to have high validity in its central components. It also became evident though, that "TPI" needs to be improved by implementing additional prognostic factors.

Therefore, DÖSAK-group undertook further research and "CIP" (computer-aided individual prognosis of squamous cell carcinomas of the lips, oral cavity and Oropharynx) was inaugurated.

Due to the large number and complexity of factors relevant to the prognosis, CIP has been conceived as a computer program, as this is the only way to ensure a simple and efficient handling. A TPI-equivalent on paper would be too bulky, too complex and too complicated in its application. CIP is available on floppy-disk with a user manual and can be installed on any IBM-compatible personal computer.

An overview will be presented of the foundations, organisation, and handling of TPI and CIP and of the possibilities of its application to estimate the prognostic relevance of additional factors (e.g., patient characteristics (immune parameters, performance status, etc.), tumour characteristics (e.g., histological grading, clonability) or symptoms (e.g., exact number and size of lymph node metastases, number and localisation of distant metastases, etc.). Above all CIP allows statistically valid judgement on therapy effects in clinical studies of new therapy modalities.

1. "Retrospective DÖSAK-Study on Carcinomas of the Oral Cavity", 1200 patients from 13 clinics were treated between 1952–1973.
2. Prospective DÖSAK-Study on Squamous Cell Carcinomas of the Lips, Oral Cavity and Oropharynx, 1485 patients from 28 clinics were treated between 1977–1982.

2. Tumor Risk Factors to Predict Occult Metastasis in Patients with SCC of the Mouth and Clinically Negative Necks

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Univariate and multivariate analyses for occult metastasis in 172 patients with SCC of the mouth and clinically negative necks were performed to elucidate the clinical and histological factors predicting occult metastasis. The multivariate Cox's proportional hazards model and quantification theory type II of Hayashi were used for prognostic factors and to determine occult metastatic probability.

Cox's proportional regression model of the factors linked to cancer-specific survival were, selected mode of cancer invasion ($P=0.0175$), tumor differentiation ($P=0.0330$) and occult metastasis ($P=0.0433$). Pathologically identified metastatic nodes occurred in 21.5% of the cases studied (37/172). Five-year survival was 94.0% for patients without nodal metastasis, 51.0% for patients with occult metastasis (log rank test, $P<0.0001$).

The contributions to occult metastasis of each of the clinical and histological factors were, in descending order: mode of cancer invasion, intensity of lymphocytic infiltration, grade of tumor differentiation, number of mitotic figures and type of growth by means of quantification theory type II. The presence or absence of occult metastasis in 147 out of 172 patients (85.4%) was correctly predicted by the score at the point of intersection of the two curves, which was -0.03 . Further investigation revealed that 28 out of 32 new cases were differentiated accurately by means of this diagnostic system.

The results of the current study may allow identification of patients who are likely to survive long enough to contribute information on the diagnosis of occult metastasis.

3. The Role of Chemotherapy in Head and Neck Cancer

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Chemotherapy as a systemic treatment concept is a rational addition to locally oriented surgery of the primary tumour and lymph node metastasis, since it is able to eradicate micrometastasis and unindented residual tumour. Moreover chemotherapy is the main treatment option effective in the most early stage of disease (chemoprevention) as well as in the late stage of tumour generalisation (chemopalliation). Because of this, chemotherapy is part of the treatment protocol in 18% of patients with oral cavity carcinomas as registered at the DÖSAK-Central-Tumour-Registry.

The goal of chemotherapy is to stop tumour stem cell ac-