EDP 09

IS THERE AN EARLY DETECTION OF LUNG CANCER?

P. Drings

There are, as yet, no specific tumor markers in lung cancer to help to detect this disease at an early stage or detect its recurrence after treatment. Only 2 methods are available for the detection of lung cancer: x-ray and sputum cytology. X-rays can detect small peripheral tumors that may be early. The early central lesions are not generally x-ray visible and can only be detected on sputum cytology. But we have to consider that not all cancers detected in this manner are necessarily early cancer. Some are late, despite detection at an asymptomatic stage.

The detection rates of lung cancer by chest x-ray surveys in Japan ranged from 3,0 to 20,5 per 100.000 for the overall population, and from 15,3 to 29,0 for individuals aged 40 years or over, with higher rates in special occupational populations. These results do not significantly differ from those carried out in United States and in Europe where the lung cancer detection rates ranged from 3,4 to 11,9. However in high risk groups or groups of subjects aged 40 years or over the lung cancer detection rates per 100.000 increased from 33,8 up to 74,4.

In the x-ray occult tumors, detection depends on sputum cytology, but localization depends on careful bronchoscopic evaluation of the tracheobronchial tree. Occult carcinomas of lung represent a very small group of lung cancers. They make up less than one half of 1% of all lung cancers seen in the Memorial Sloan Kettering Cancer Study. But there is evidence that early removal of these tumors after detection and localization may result in an improved cancer cure rate and not simply be again in lead time. For determination of the ultimate usefulness of screening longer follow up is necessary. An early detection programm is very important for high risk patients (age over 45 years, heavy smokers or special occupational exposure).

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EDP 10

EARLY DETECTION OF BREAST CANCER. ROLE OF SONOGRAPHY FOR MASS-SCREENING. INTERNATIONAL STAND OF TECHNIQUE AND ORGANISATION.

H. G. Hillemanns and H. Madjar

Incidence of breast cancer is increasing. Life expectancy can only improve with detection at an early stage. The HIP screening program initiated in the USA in 1963 has proven the value of X-ray mammography in decreasing the mortality rate in the screened population which was most evident in the age group of 50-59 years. Most carcinomas found at this age are already palpable.According to estimated growth rates tumors found in young women are more likely to be at an early stage. The young breast which is often radiologically dense is very suitable for ultrasonic check up.

In relevant studies sensitivity of ultrasound in detecting breast carcinomas ranges between 83% (Jellins 1982) and 94% (Kelly Fry 1983). An own evaluation of 1188 patients with 63 cancers has a sensitivity of 87%, $T_1$86%, $T_2$88% (Madjar 1984). In Japan almost 40,000 women have been screened with varying ultrasound equipment (Wagai 1985). As sonographic screening is mainly limited by the relatively long examination time, Wagai has developed a new technique based on a System 1 water-path breast-scanner (Ausonics). 1 examination requires 4 minutes, reporting 1 minute. In USA, Japan and Australia whole breast water-path scanning is preferred as a screening modality. In Europe where ultrasound is more considered as a complementary technique to X-ray mammography, most investigators find realtime equipment as sufficient. Recently development of computerized sonography in USA (Greenleaf 1983) and Australia (Mc Caffrey 1985) appears to inaugurate a new possibility for an ideal breast-screening.

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EDP 11

EARLY SEROLOGICAL TUMOR DIAGNOSIS - WISHFUL THINKING OR REALITY

S. von Kleist

An early diagnosis of his neoplasia is still of vital importance for the cancer patient because of the deadly threat of metastases formation.

Although a great number of tumor marker substances, including those recently characterized by monoclonal antibodies, has been widely studied and advertized for their cancer diagnostical interest, none has been found so far that has the specifity and sensitivity required for the truly precocious detection of primary malignancies.

However, clinically some serological tumor marker tests can be used profitably as an aid in the evaluation of the cancer patient, i.e. for the improvement of the tumor staging, of which depends the assessment of the prognosis and the therapeutic scheme.

Likewise, selected markers can be valuable indicators of recurrencies, development of metastases or tumor progression, thus allowing therapeutical measurements to take place in a still potentially curable stage of the disease. However, it is important to know certain limitations of the marker tests in order not to overestimate their informational possibilities.

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EDP 12

METHODS FOR EARLY DETECTION OF TUMORS: EFFECT ON THERAPY

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Patients with cancers diagnosed at an early stage have the best prognosis. Yet due to little early symptoms or symptoms clinically not recognized to be related to the tumor, many cancers are still detected in advanced stages.Reports of immunologically detectable tumor associated antigens (TAA) in the blood of the tumor bearer set on fruitful clinical studies to use such products for tumor diagnosis. Since then numerous TAA have been described, however no antigen was characterized to predict a malignant tumor reliably so far. Though of limited use for primary diagnosis several TAA(CEA, AFP, β-HCG, CA19-9, CA12-5), now called tumor markers (TM) play an important role in the clinical management of various groups of tumor patients.

In patients with GI-tumors increasing CEA levels are of high clinical value for the early detection of relapse. The initial TM-increase is generally recorded months before relapse is evident by apparative diagnostic procedures. Using this lead time for surgical reintervention it was convincingly shown that patients undergoing resection of tumor in a second-look-operation (SLO) are cured in a high percentage whereas all those who refused SLO deceased (Am.Surg.149,198 1985; Cancer 55, 1284,1985). Introducing CEA-doubling times, TM are useful in the estimation of tumor growth. This application offered a rating scale to judge efficacy of antitumortherapy individually (Br.J.Cancer 46, 773,1982).

In testis tumors AFP and β-HCG have influenced clinical management extensively. Again persistancy or reincrease of TM were indicative to carry on therapy or to introduce renewed cycles of therapy until TM decline and reach an individual base line.

The final goal to detect cancers of early stages seems to be within reach for pancreatic tumors because highly elevated levels of CA19-9 were also found in the majority of early stages. The surveillance of patients after operation, however, is still the domaine of this TM too.

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