with ABC. Markers were determined before, during and after tr (hormono or chemotherapy). Cut off was: CEA = 5; MCA = 11; CA 15.3 = 30. Pre-treatment CEA was elevated in 51% of pts, MCA in 72% and CA 15.3 in 71%. In this subgroup of pts these markers were correlated to response to tr respectively: CEA in 75% of pts, MCA in 82% and CA 15.3 in 79%. We observed that CEA showed an inferior sensitivity to the other markers (51% vs 72% and 71%). We concluded that these markers can be useful to monitor the therapy in pts with elevated levels pretreatment. We believe interesting to determine them together pretreatment, because at least 1 of the 3 was elevated in 89% of pts.

1264 POSTER

## CYTOKERATIN 19 SOLUBLE FRAGMENTS (CK19) DETERMINATION IN PATIENTS WITH NON-SMALL CELL LUNG CANCER (NSCLC): COMPARISON WITH TPA, CEA, SCC AND NSE

*P. Foa[1], E. Seregni[2], L. Santambrogio[3], M. Mezzetti[3], M. Sala[1], A. Iurlo[1], E. Bombardieri[2]*
*[1]Istituto di Scienze Mediche*
*[3]Istituto di Chirurgia Generale e Toracica, Universira degli Studi di Milano*
*[2]Istituto dei Tumori, Milano, Italy*

Preliminary studies have shown a correlation between CK 19 high levels and NSCLC. In order to evaluate the clinical role of this tumour marker, we have compared CK 19 with TPA, CEA, SCC and NSE in a series of 72 patients with newly diagnosed, histologically proven NSCLC (39 squamous cell, 33 adenocarcinoma); all patients underwent surgical resection. CK 19 serum levels were determined by means of the Enzymun Test Cyfra-21.1 (Boehringer Mannheim). ROC curves were defined for each tumour marker; Youden test, Mann-Whitney U test and the Kruskal-Wallis test were used for statistical analysis. Our data show that CK 19 is an accurate tumour marker in patients with NSCLC and it displays a close association with the squamous cell histotype. However, CK 19 does not offer better informations than CEA in adenocarcinoma and TPA in squamous cell carcinoma.

1265 POSTER

## THE DIAGNOSTIC POTENTIAL OF "ONCOTEST" AS A METHOD FOR POPULATION SCREENING TO DETECT MALIGNANT TUMORS

*K.A. Galakhin, V. Vladimirov, E.I. Suslov*
*Department of Pathology, Institute of Oncology and Radiology, 252022, Kiev, Ukraine*

Our method of marker diagnosis of human malignancies is based on detection of $Ca^{+2}$-Histone complexes in peripheral blood which enter circulation from foci of primary and/or secondary malignant neoplasia as a result of the former split from tumor cell DNA (PCT/UA/00007, 031293, International Bureau of WIPO, Geneva, Switzerland). We performed screening of 3820 employees in Kiev: results of ONCOTEST were correct for 3800 PA (true negative-3773, true positive-17) with 20 errors (false positive-18, false negative-2). Morphologic verification of 17 true-positive results revealed 8 cancers: esophageal-1, gastric-1, rectal-1, breast-1, lung-1, thyroid-1, uterine-3, osteosarcoma-1, Ewing's sarcoma-1, soft tissue sarcoma-2, lymphosarcoma-3 and lymphogranulomatosis-1.

1266 POSTER

## USE OF SERUM THYROGLOBULIN FOR MONITORING THE EFFECT OF CHEMOTHERAPY AND IRRADIATION IN DIFFERENTIATED THYROID CANCER

*M. Hočevar, M. Auersperg*
*Institute of Oncology, Ljubljana, Slovenia*

Standard evaluation of the effect of chemotherapy (CHT) and/or irradiation (RT) by measuring tumor diameters can be misleading due to tumor necrosis. The aim of this work was to study the value of sequential Tg measurements for monitoring the effect of treatment in inoperable differentiated thyroid cancer (DTC).

From 1985–1993, 48 cycles of treatment were applied in 36 patients (27 females, 9 males, age 33–81 years) with primarily inoperable, recurrent or metastatic DTC. Serum Tg measurements were performed before therapy (CHT or CHT and RT), 24, 48, 72, 96 hours and 3 weeks after treatment. The changes in Tg levels, tumor diameters, cytomorphology and DNA distribution pattern after treatment were evaluated.

In 39/48 cycles the results of monitoring the effect of treatment by serum Tg measurements were in agreement with the results of other methods. In 6 patients elevated serum Tg after treatment were observed, which could classically be interpreted as tumor progression. However, the other methods indicated excellent treatment effect. In latter increased Tg was the consequence of tumor necrosis and increased efflux of Tg. Consequently, the actual sensitivity of monitoring treatment by Tg measurements was 93.7% (45/48). Beside the changes in cytomorphology and DNA distribution pattern, the Tg levels can be an early indicator for effectiveness of CHT.

1267 POSTER

## EXPRESSION OF HER-2/NEU EGFR, HORMONE RECEPTORS, CATHEPSYN-D AND PLOIDY IN NORMAL AND NEOPLASTIC GI TRACT TISSUES

*N. Gibelli, G.M. Valesi[1], C. Zibera, P. Pedrazzoli, G. Robustelli della Cuna*
*Division of Medical Oncology, IRCCS Fondazione Clinica del Lavoro*
*[1]Department of Surgery, IRCCS Policlinico S. Matteo, Pavia, Italy*

Six biochemical parameters, recognized as being prognostic factors in breast cancer, were evaluated on fresh samples of human GI tract tumors to better define the biology and natural history of such neoplasms. Levels of expression of HER-2/neu oncogene and epidermal growth factor receptor (EGFr) protein products, ER, PgR, cathepsin-D and ploidy were determined in 16 gastric and 39 colorectal tumors and compared with normal samples from the same subjects. In 56% of gastric, 61% of colon and 35% of rectum carcinomas HER-2/neu gene product p185 was significantly overexpressed as compared to normal tissues. On the contrary colon and rectum tumors expressed significantly lower levels of EGFr than normal in 60% of cases. Very low levels of ER and PgR were detected in all the samples (normal and malignant) tested. 75% of tumour tissues showed a significant higher cathepsin-D content compared to the respective normal sample while an aneuploid DNA profile was documented in 72% of neoplasms. Overall, change of the markers evaluated seems to be a specific phenomenon of certain GI carcinomas. Higher EGFr levels in normal than malignant tissues suggest that EGFr can be implicated in the process of growth and differentiation of the normal gastrointestinal mucosa. Further studies on a larger number of cases along with an adequate follow-up of patients are needed to define the role of these markers in the pathogenesis of GI tract neoplasms and its prognostic significance when considered together with other major risk factors.

1268 POSTER

## IS AN INCREASED CARCINOEMBRYONIC ANTIGEN (CEA) CONCENTRATION IN PERICARDIAL FLUID AN INDICATION OF MALIGNANT PERICARDITIS?

*M. Szturmowicz, W. Tomkowski, A. Fijałkowska, A. Sakowicz, S. Filipecki*
*Institute of Tuberculosis and Chest Diseases, Warsaw, Poland*

The aim of the study was to evaluate the role of CEA in pericardial fluid (pf) for the recognition of malignant pericarditis. 30 patients (pts): 15 men, 15 women, median age 61 years with large pf of unknown origin were treated with pericardiocenthesis, cathether instillation and pf drainage. In 21 of them malignant pericarditis was diagnosed. The primary site of tumor was lung in 19 pts, pleura in 1 pt and large bowel in 1 pt. In 9 pts the cause of pericarditis was benign. CEA was measured with radioimmunoassay. Cut off value was calculated at 7 ng/ml. Elevated CEA levels were found in 18/21 malignant pf and 0/9 nonmalignant pf. Mean CEA values were: $52.29 \pm 40.66$ ng/ml for malignant pf and $2.21 \pm 1.28$ ng/ml for nonmalignant pf. We conclude that CEA determination in pf is very helpful in recognition of malignant pericarditis.

1269 PUBLICATION

## THE VALUE OF FERRITIN IN THE DIFFERENTIAL DIAGNOSIS OF MALIGNANT EFFUSIONS

*A. Demirkazik, D. Dinçol, S. Hastürk, A. Arican, H. Karaoguz, F. Çay, F. Içli*
*Department of Med. Oncology, Med. Sch. of Ankara University, Ankara, Turkey*

The diagnostic value of ferritin in pleural effusion or ascite was studied in 147 patients (89 males and 58 females). One hundred and fifty-one samples (99 pleural effusions and 52 ascites) were examined. The effusions comprised 4 groups: transudate, tuberculous, malignant and benign non-tuberculous exudate. Median ferritin levels in effusions were as follows: 67 ng/ml (27 cases) in transudate, 889 ng/ml (47 cases) in tuberculous, 998 ng/ml (51 cases) in malignant and 805 ng/ml (26 cases)

benign non-tuberculous exudate. Median effusion/serum (E/S) ratios were 0.7, 4.9, 3.2, 2.0, respectively. The ferritin levels in transudate group were significantly lower than those in the others ($P < 0.001$). Although there was a significant difference between malignant and non-malignant effusions in terms of the level of effusion ferritin, the specifity and positive predictive value (PPV) (cut off value 350 ng/ml) were 43% and 45%, respectively. Taking into account local inflammatory and non-inflammatory disease, the specificity and PPV of effusion ferritin level were 70% and 90%, respectively. As a conclusion; (1) Ferritin level in effusion is an important indicator of exudative effusion, (2) it is not a good parameter to discriminate the malign effusion from benign one because of low specificity and PPV, (3) It could be used to differentiate the inflammatory effusions from non-inflammatory ones.

1270 PUBLICATION

## TPS ANTIGEN AS A MARKER FOR MALIGNANT TUMORS

*J. Millan, P. Rodriguez-Rubio, J.J.B. Lopez, M. Escobar, P. Gallurt, P. Rodriguez, A. Lorenzo, A. Moran, A. Senra*
*Department of Medicine, University of Cadiz*

We are interested to study the accuracy of TPS serum quantification in the diagnosis of solid tumors, to evaluate this serum test as a biological marker of malignancies.

We have studied TPS levels in serum of cancer patients with breast cancer, lung cancer, head and neck squamous cell carcinoma and other solid tumors. TPS was determined by ELISA in 95 cancer patients and in 58 healthy controls. In tumor patients, TPS levels were ($\bar{x}\pm$sem) 504.5 $\pm$ 110.2 mU/ml and in control group 80.6 $\pm$ 9.4 mU/ml with a significant difference ($P < 0.001$). According with level of 149.33 mU/ml ($\bar{x}$+DS) as cut-off point, sensitivity was 42%, specificity 90, positive predictive value 89%, and negative predictive value was 47%. The upper limit for admissible interval (99% of viability) was 105.1 mU/ml.

Unfortunately, we have not found any difference in relation with stage of disease, and this feature limits the usefulness as a tumor marker and in follow-up of the patients.

Our results are expressive of the usefulness in the positive diagnosis of cancer, but we have found a high ratio of false negative results: 58%. Nevertheless, false positive results were only 10%, and this feature could be used in the clinical diagnostic procedures.

1271 PUBLICATION

## THE ROLE OF SOLUBLE INTERLEUKIN-2 (SIL-2R) RECEPTORS AS A TUMOR MARKER IN PATIENTS WITH ADVANCED COLORECTAL CANCER (ACC)

*N. Pavlidis, E. Bairaktari, C. Nicolaides, J. Kalef-Ezra, A. Athanassiadis, C. Seferiadis, G. Fountzilas*
*University of Ioannina and Aristotelian University of Thessaloniki, Greece*

The purpose of this study was to evaluate sIL-2R as a tumor marker in pts with ACC and to correlate it with CEA and CA 19–9.

*Results:* The sera of 52 pts and of 25 normals were studied. 75% of the pts had increased sIL-2R levels (L) mean 1539 $\pm$ 155 U/ml (CEA 692 $\pm$ 259 ng/ml, CA 19–9 10.948 $\pm$ 5222 U/ml). Relationship of sIL-2R L with type of metastases was not significant ($P < 0.34$). sIL-2R L had linear correlation with CEA ($P < 0.05$). Paired t-test between 1st and 2nd measurement of sIL-2R in non-responded pts was significant ($P$ 0.032). Prognostic value between pts with PROG or SD disease were highly significant ($P$ 0.0008). Also, prognostic value for survival was highly significant ($P$ 0.049).

In conclusion, serum sIL-2R L in pts with ACC: (a) are increased in 2/3 of the pts, (b) are an indicator for disease progression, (c) they correlate with CEA L and (d) have prognostic value for survival.

1272 PUBLICATION

## OVARIAN CANCER PATIENTS WITH MINIMAL RESIDUAL DISEASE: TPA, CA-125 AND TATI SENSITIVITY

*Z. Stanojević, M. Milutinović, N. Potić Zečević, S. Radić, S. Filipović*
*Clinic of Oncology, Niš, Yugoslavia*

A retrospective study reviewed 137 patients with epithelial ovarian cancer treated by cytoreductive surgery and cis-platin based combination chemotherapy. During therapy minimal residual disease (pelvic mass $\leq$ 2 cm) was registered in 73 cases. CA-125 serum levels showed elevated values ($\geq$35 U/ml) in 46.5% patients, TPA ($\geq$95 U/L) in 59.3%, and TATI ($\geq$21 gr/L) in 66% cases. Simultaneously measuring all three tumor markers showed 85% sensitivity. These results indicate that CA-125 isn't sensitive enough for monitoring tumors less then 2 cm. The authors concluded that using a combination of TPA, CA-125 and TATI assays provides more precise prediction of minimal residual disease than serum level CA-125 alone.

1273 PUBLICATION

## CLINICAL ASSESSMENT OF SEROLOGIC MARKERS INDICATED VALUES IN DIAGNOSIS AND TREATMENT OF TROPHOBLASTIC DISEASE

*K. Jordania, B. Toloknov, A. Sokolov, E. Makhova*
*Department of Gynecology, Cancer Research Center, 115478 Moscow, Russia*

150 patients (pts) with various types of trophoblastic disease (TBD) were involved in this study. hCG and SP1 titers were used for diagnosis and dynamic control of disease response to therapy. Diagnostic value of hCG and SP1 titers was 93% and 88% respectively. Monitoring revealed 7 pts with clinically manifestative form of TBD (increase in uterine size and/or metastases to lungs and/or vagina). All the pts had high hCG titers whereas SP1 titers were decreased to normal level. At the same time in 3 pts with disease progression high SP1 and normal hCG levels were detected. *Conclusion:* The study has shown high specificity and diagnostic significance of hCG and SP1 both in diagnosis and dynamic observation over pts suffering from TBD.

1274 PUBLICATION

## DETECTION OF SOLUBLE HUMAN CARCINOMA-ASSOCIATED TN-GLYCOPROTEINS BY A NEW IMMUNO-LECTIN-ENZYMATIC ASSAY (CA83.4)

*E. Cairoli, M. Varangot, S. Signorelli, C. Batthyany, S. Bianchi, M. Beuzelin, E. Phillips, I. Musé, A. Roseto, E. Osinaga*
*Servicio de Oncologia Clinica and Departamento de Bioquímica, Facultad de Medicina, Montevideo, Uruguay*
*DICA, Université de Technologie de Compiègne, France*

The Tn antigen (GalNAc-O-Ser/Thr) is one of the most specific human carcinoma associated structures. In order to measure soluble Tn-glycoproteins, we have developed an immuno-lectin-enzymatic assay (CA83.4), in which a monoclonal antibody (83D4) is bound to the solid phase to capture glycoproteins bearing Tn determinant. After addition of test sample, biotinylated isolectin B4 from *Vicia villosa* and avidin-peroxydase are used as a detection system. CA83.4 values were significantly elevated in the serum of 36/102 patients with cancer (35.3%), 0/50 of patients with non malignant diseases and in none of 97 healthy controls. CA83.4 was also elevated in 74/85 of pleural or ascitic serous effusions associated with cancer (87%) but not in the 24 serous effusions from patients without cancer. All samples from patients with haematologic malignancies showed very low or undetectable levels of antigen. This first report on soluble Tn-glycoproteins detection suggests that CA83.4 assay could be a specific serological tumor marker. A large study is in progress to determine the true clinical value of the test.