detection and diagnosis

PREDICTION OF AXILLARY STATUS FROM SENTINEL LYMPH NODE TESTING WITH AN INTRA-OPERATIVE RT-PCR TEST – MULTI-CENTER ANALYSIS OF 1138 PATIENTS

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Objectives: A molecular assay (GeneSearchTM, Veridex, LLC) intra-operatively detects metastases >0.2 mm in the sentinel lymph nodes (SLNs) to enable same surgery complete axillary lymph node dissections (ALND) for SLN-positive patients. Previous reports show high assay sensitivity and specificity vs. permanent section histology (H&E) on the same SLNs. More important is if the assay provides high predictive value for axilla status. This is a multi-center report of the assay’s ability to predict non-SLN status during clinical use.

Method: Four U.S. sites, 1 Belgium site and 1 UK site participated in this analysis. SLNs are cut into ~2 mm sections. Alternating sections are processed fresh in the assay. The assay provides qualitative for intra-operative decisions for same surgery ALND. Remaining sections are used for H&E. Typically, ALND is performed when any test is positive. At some sites, ALND is also performed on patients with negative SLNs when the primary tumor is larger than predicted. Non-SLNs from ALND are assessed per the sites’ standard procedures. In this analysis, nodes positive when metastases are >0.2 mm.

Results: The assay has been used on 1138 patients to date. Typical assay turn around time to result is ~30-40 minutes. SLN positivity rates are 30% (assay) and 26% (H&E). The table shows positive and negative predictive values for ALN status for assay alone, for H&E alone, and combined results. Results within clinical sites were similar to the combined data.

<table>
<thead>
<tr>
<th>Assay Results</th>
<th>Non-SLN Status</th>
<th># of ALNDs</th>
<th># of Non-SLN Pos</th>
<th>Predictive Performance</th>
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</thead>
<tbody>
<tr>
<td>SLN Results</td>
<td>N (patients)</td>
<td>Histology</td>
<td>Pos</td>
<td>Micro</td>
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<tr>
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<td>911</td>
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<tr>
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<tr>
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<td>141</td>
<td>PPV: 42%</td>
<td>PPV: 42%</td>
<td>PPV: 42%</td>
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<tr>
<td>Micro</td>
<td>61</td>
<td>PPV: 31%</td>
<td>PPV: 31%</td>
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<tr>
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<tr>
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<td>PPV: 99%</td>
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<tr>
<td>Both Neg</td>
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<td>PPV: 99%</td>
<td>PPV: 99%</td>
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<tr>
<td>Both Pos</td>
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<td>PPV: 40%</td>
<td>PPV: 40%</td>
<td>PPV: 40%</td>
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<tr>
<td>Assay+H&amp;E Macro</td>
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<td>PPV: 43%</td>
<td>PPV: 43%</td>
<td>PPV: 43%</td>
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<tr>
<td>Assay+H&amp;E Micro</td>
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<td>PPV: 35%</td>
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<td>Histology only Pos</td>
<td>18</td>
<td>PPV: 14%</td>
<td>PPV: 14%</td>
<td>PPV: 14%</td>
</tr>
</tbody>
</table>

Conclusions: This RT-PCR assay on SLNs has high predictive performance for axilla status. The data to date indicate the intra-operative assay result is as accurate as permanent section histology on SLNs for predicting non-SLN status, even when histology is negative. The assay dramatically reduces the need for second surgery ALND (1.6% [18/1138] patients assay negative/histology positive) and provides a particularly high NPV to assure the pathologist, surgeon and patient that occult metastases are unlikely.

BREAST CANCER SUSCEPTIBILITY VARIANTS ALTER RISKS IN FAMILIAL DISEASE

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Purpose: Recent candidate and genome wide association studies have identified variants altering susceptibility to breast cancer. We aimed to establish the relevance of these variants to breast cancer risk in familial breast cancer cases both with and without BRCA1 or BRCA2 (BRCA1/2) mutations.

Methods: A cohort of unrelated individuals affected from breast cancer due to the presence of either BRCA1 (121) or BRCA2 mutations (109) and females with familial breast cancer, not due to BRCA1/2 mutations (722) were genotyped using Taqman SNP Genotyping Assays. Allele frequencies were compared with an ethnically and gender-matched group of 436 unrelated females.

Results: A synonymous variant in TNBC9 was associated with increased risk of breast cancer (p<0.001) in BRCA2 mutation carriers. We replicated the associations for FGFR2 (p=0.04), TNRC9 (p=0.001), MAPK1 (p=0.03), CASP8 (p=0.02) and the chromosome 8-associated SNP (p=0.002). The chromosome 8-associated SNP was significantly lower in controls than in cases (p=0.003), while individuals carrying one or two copies of the FGFR2 variant had a higher Manchester Score (p=0.01).

Conclusion: Our study confirms the relevance of the genetic susceptibility variants in FGFR2, TNRC9, MAPK1, and on chromosome 8q are all associated with increased risk of cancer in individuals with a family history of breast cancer, whereas CASP8 is protective in this context. The risk difference is dependent upon the strength of the family history and the presence of a BRCA1/2 mutation and contributes to the understanding of the use of these variants in clinical risk prediction.

TOP2A AND HER2 CO-AMPLIFICATION IS UNCOMMON BY HIGH RESOLUTION REPRESENTATIONAL OLIGONUCLEOTIDE MICROARRAY ANALYSIS (ROMA) IN HUMAN BREAST CANCER

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Background: Clinical studies investigating TOP2A expression or gene amplification have yielded inconsistent results. These inconsistencies have been particularly noted in studies seeking to relate TOP2A and HER2 status by FISH with response to specific drug therapies. HER2 and TOP2A are relatively small genes that are closely notable in studies seeking to relate TOP2A and HER2 status by FISH with response to specific drug therapies. HER2 and TOP2A are relatively small genes that are closely

Methods: Forty-two archived formalin-fixed paraffin-embedded primary breast cancer specimens were selected to contain HER2 amplified and 6 HER2 non-amplified cases by FISH. These specimens were evaluated for HER2 and TOP2A amplification by FISH and TOP2A amplification by FISH with ROMA, a high resolution technique.

Results: Of the 40 evaluable specimens, the 6 cases selected as HER2 non-amplified by FISH were HER2 non-amplified by ROMA and TOP2A non-amplified by both FISH and ROMA. Thirty-two specimens were HER2 amplified by both FISH and ROMA. Twenty-five (74%) of the 34 specimens with HER2 amplification by FISH at Memorial Sloan-Kettering Cancer Center (MSKCC) and by ROMA at Cold Spring Harbor Laboratory (CSHL) in a double-blinded experiment. Two HER2 amplified by FISH specimens were not technically evaluable for TOPO2A by FISH or ROMA. The results for the remaining 40 evaluable specimens were compared.

Conclusions: All 40 gene expression and gene amplification cases successfully analyzed with TOP2A and HER2 expression and gene amplification.

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modulated assay we have determined the corresponding expression of EGFR, by FISH and IHC. The modified adenoma modulating expression of EGFR-TKI by changing of anti-EGFR antibody C225 treatment because of enhanced radiosensitivity. More tending towards ipofractionation and towards reduction of overall time of breast cancer irradiation, compared to standard fractionation of 25 f, 2 Gy/f, more and

Results:

Alexis Vautrin, Nancy/FR, 6Gyn&obs, Jean Verdier, Bondy/FR, 7G&o, Tenon, et al. The purpose of our investigation was to compare these models in a prospective, single-center study. Patients and methods: Our study involved a cohort of 536 patients having one to three involved sentinel lymph nodes (SLNs). Two scores were developed by Chapgar et al. (Louisville scores) and Shvedova et al. (Berlin scores). The number of involved SLNs was identified in all cases by intraoperative evaluation. The lymph nodes (ALNs) in breast cancer patients with one to three involved sentinel lymph nodes (SLNs). We validated the Katz nomogram for its use in clinical practice.

Conclusion: We validated the Katz nomogram for its use in clinical practice.

44P MODULATED EGFR-TKI EXPRESSION BY C225 MONOCLONAL ANTIBODY LIKE FACTOR TO OBTAIN MORE EFFECTIVE RADIO-BIOLOGICAL FRACTIONATION IN BREAST CANCER IRRADIATION.

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Aim: New molecular targeting agents increase the efficiency of radiotherapy because of their effect on inhibition of proliferation and DNA repair; induction of apoptosis, prolonged growth time and growth delay. It was investigated how these effects result in enhanced radiosensitivity by changes of α/β values for tumor cell lines of breast adenoma modeling expression of EGFR-TKI by changing of anti-EGFR antibody C225 concentration in the cultures. The modified α/β values measured have been transposed in a software (SW), specially created by our group, that implements radiobiological and kinetic parameters for tumor (T) and organs at risk (OARs) involved, and which allow to obtain modified optimal fractionation (MOF), in the terms of dose/fraction (d/f) and inter-fraction time.

Material and Method: Cell lines of human breast adenoma (MDA MB 231) were cultivated on sterile Culture Slides and incubated with different concentration of C225, from 10 nm to 100 nM with step of 10 nM, and lately irradiated by increasing levels of dose radiation, between 2 and 6 Gy, dose rate of 3 Gy/min at 37°C. For each Colony formation assay we have determined the corresponding expression of EGFR, by FISH and IHC techniques, and curves of Surviving Fraction (SF) to obtain modulated β/β values. These values have been introduced in SW to obtain MOF.

Results: We found a correlation between the increased expression of EGFR and the corresponding values α/β derived from SF. This relationship is reflected in MOF for breast cancer irradiation, compared to standard fractionation of 25 2 Gy/f, more and more tending towards ipofractionation and towards reduction of overall time of treatment because of enhanced radiosensitivity.

Conclusions: The change expression of EGFR has a considerable impact on detection of more effective fractionation dose. It has to be kept in mind that effects in vitro of combination (drug/radiation) do not necessarily translate into an effect of the same direction or magnitude in vivo, furthermore mechanic studies in vitro may give very important information for further preclinical testing in animal models and for clinical studies fractionation dose in radiotherapy.

44P SENTINEL LYMPH NODE BIOPSY AFTER NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER PATIENTS

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Background: Sentinel lymph node (SLN) biopsy has been shown to be both accurate and feasible for axillary staging in patients with early breast cancer. Questions have been raised regarding the effectiveness of SLN biopsy in patients who have received neoadjuvant chemotherapy (NAC) and some reasons include excessive fibrosis of the primary tumor and lymphatics. The aim of this study was to evaluate the accuracy and feasibility of SLN biopsy in breast cancer patients who have received NAC.

Methods: Patients with stage I, II and III A who were treated with NAC were included in the study. After completion of the chemotherapy regimen, surgery was performed including lymphectomy or mastectomy, and sentinel node biopsy followed by axillary node dissection. Sentinel node biopsy was performed in all patients the day before surgery. SLN was sent to pathology for intraoperative assessment. Results: Thirty- seven patients were included in the study. The SLN was identified in 33/37 patients (identification rate 94, 5%). Twelve (32,4%) patients had a positive sentinel node. The SLN was the only positive node in 4 (33,3%) of these patients. Eight (66,6%) of the twelve patients with metastasis to the SLN had other non-SLN metastasis, including one patient with sub-micrometastasis and one patient with micrometastasis to the SLN. One patient had a false negative SLN, with a false negative rate of 7, 6%.

Conclusion: The accuracy of SLN biopsy after NAC is comparable to the rates obtained in the adjuvant setting. SLN biopsy after NAC can spare an axillary node dissection in those patients who have been downstaged to node negative disease after the NAC.

44P INTRA-OPERATIVE SENTINEL NODE METASTASIS DETECTION IN BREAST CANCER BY ONE-STEP NUCLEIC ACID AMPLIFICATION (OSNA): THE SAINT-ETIENNE HOSPITAL AND RENNES CANCER INSTITUTE EXPERIENCE

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1Biology, Cancer Institute Eugène Marquis, RENNES/FR, 2Pathology, Saint-Etienne Hospital, Saint-Etienne/FR, 3Surgery, Cancer Institute Eugène Marquis, RENNES/FR, 4Pathology, Pathology Richer Laboratory, Rennes/FR

Background: Sentinel lymph node (SLN) biopsy is widely used as a staging procedure in early breast cancer. Conventional methods for intra-operative assessment have a low sensitivity and lead to second surgeries when the SLN is metastatic during postoperative histology. The accuracy of SLN biopsy after NAC is comparable to the rates obtained in the adjuvant setting. SLN biopsy after NAC can spare an axillary node dissection in those patients who have been downstaged to node negative disease after the NAC.

Conclusion: The accuracy of SLN biopsy after NAC is comparable to the rates obtained in the adjuvant setting. SLN biopsy after NAC can spare an axillary node dissection in those patients who have been downstaged to node negative disease after the NAC.
S.V. Krishnamurthy
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Axillary lymph node dissection is a routine component of surgical care for breast cancer patients as imaging modality has consistently failed to stage the axilla accurately. In the recent past, intra-operation mapping is emerging as a primary approach in the axilla staging. In developing countries like India, node negativity is seen in only 5-10% of the breast cancer patients. We have initiated sentinel lymph node biopsy in our institute with aim of opting for a conservative approach to the axilla. In this abstract, 28 patients with breast cancer with negative axilla are analyzed from Jan-Dec 2004. The initial 10 patients underwent radio isotope identification of sentinel nodes and later on we adopted a combined use of blue dye and radio isotope identification of the sentinel nodes for the remaining patients. We recorded a single false negative case when only radioisotope was used. In the combined technique, all the sentinel nodes on frozen section were accurate.

Twenty of specimens were found to be negative for metastasis. On SLNB, only 8 specimens showed metastasis. The sentinel node identified was stained blue and showed a radioactivity of 120-400. Since we had done a routine level 1 and 2 dissection of axilla, we were able to identify the accuracy of sentinel lymph node biopsy in these patients. Among 8 patients who showed SLNB positivity, their axillary dissected specimens showed microscopic disease in 2 patients and of the remaining 6 specimens, 1 patient showed metastatic 2 masses in 2 nodal and 5 patients showed no disease in the remaining nodes. Combination of dye and radioisotope gives 100% accuracy rate thus enabling us to avoid a classical axillary dissection if the SLNB is negative for metastasis in the future. The role of ALND in SLNB positive node is controversial. The long term effect in avoiding ALND for SLNB negative patients will be analyzed in the future.

Purpose: To evaluate the place of a yearly ultrasoundographic examination in the follow-up of a breast biopsy negative breast lesion.

Material and methods: From 2003 until 2008, 1,030 patients underwent breast cancer surgery and a sentinel node excision. The indications for sentinel were made according to the EUSOMA Guidelines. For the evaluation of the sentinel node a 1,2 cc solution of 1.2% methylene blue was injected subcutaneously above the tumor site the day before surgery. During surgery methylene blue was injected too. The lymph nodes with the highest counts (detected with a gamma probe) as well as the blue one were dissected. When metastases, even micro metastases, were noted a whole lymph node excision was done. All patients underwent a yearly mammography and ultrasoundography of the breast (axilla and infracavicular region). Within one week after the radiographical examination and clinical examination was done. All ultrasound examinations were performed on an ALOKA 5000 or alpha 10.

Results: Already one year after surgery, two relapses in the axilla were found: one patient had a large in situ carcinoma and the second patient a medially located axillary lymph node. Both ultrasound and clinical examination showed the adenopathies.

Conclusion: In the future a systematic investigation of the axillary region is perhaps not necessary in certain circumstances. Further long time follow-up of this group of patients is however necessary to evaluate better the additional benefit of ultrasound.

NEW TISSUE ACQUISITION TECHNIQUES FOR BREAST LESIONS

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Recent innovations in breast tissue acquisition led to the development of unique direct frontal systems which add new possibilities in comparison to traditional biopsy tools. Predictive and single center clinical trials proved their usefulness in particular for molecular biology and tissue banking. Now multicenter clinical experience is described. Completeness of diagnosis including gene profiling and molecular biology, patient comfort, costs of the procedure and tissue quality were the primary research goals. A total of 153 women with a suspect lesion were eligible. The lesions were detected by clinical examination, mammography, ultrasound, and/or MRI. Performance is evaluated by comparing the pathology results of the samples and definitive pathology at subsequent surgery or follow-up of the patient in case of benign lesions. In case of malignancy, the amount and quality of tissue should be sufficient for gene profiling and other molecular biology techniques. Both manual and computerized systems were used throughout the study. An average of 1.7 biopsies per procedure was taken with an average diameter of 4.06 mm and a length of 1.3 cm. All patients had sufficient sample size for diagnosis, including molecular biology. None of the patients suffered from a moderate to serious complication and the procedure was in general extremely well tolerated. Hematoma was seen in only 4 patients that could be treated with conservative measures. Post-procedure esthetic results were excellent. Correct diagnosis was made in 151 patients. One patient had a minimal invasive cancer on definitive pathology after resection while the sample contained only DCIS. The costs of the procedure can be substantially lowered to less than 10 USD by use of the reusable system. Direct frontal tissue acquisition systems give excellent diagnostic results without major patient discomfort and with high quality tissue samples. The system is particularly useful in various difficult or dangerous situations that are now relatively contraindicated and for obtaining sufficient tissue for molecular biology. The new procedures can be performed at significantly reduced costs allowing more women to access early and better detection of breast cancer.
in BRCA2 genes in both sporadic and familial breast cancer patients. This indicates that these mutations may be associated with breast cancer in Indian population and can be used as biomarkers for early detection of breast cancer in younger generations having a family history as well as for monitoring individual women for risk of breast cancer.

**CHARACTERISTICS OF THE ORGANIZATION AND RESULTS OF BREAST CANCER SCREENING PROGRAM IN NORTH REGION OF RUSSIA**

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Introduction: A well-known postulate - the earlier a disease is detected the better outcome of treatment is. In this regard, the primary role in reducing the mortality rate of women with breast cancer is improvement and optimization of the early diagnosis. In Russia the most extensive program of screening for the early detection of breast cancer is currently being conducted in Moscow. From 2004 to 2007, 1,228,570 women were screened. Breast cancer was diagnosed in 3,311 cases (0.2%).

Goal: To define the results of screening program (1.5 years) using diagnostic equipment performance evaluation criteria in Khanty-Mansiysk State Region – Ugra.

Results: The reports were provided by 21 municipal districts from March 2007 to July 2008. By mammography and ultrasound, 11,4901 women have been inspected during 16 months, including 6,1959 within screening program (SP). This number represents around 20% of the female population over 20 years of age. By mammography 5,6771 women over 40 years have been inspected (18.6% of the female population in this age group), including 2,9974 within the SP. Ultrasound has been performed in 58,130 women (39% of the total examinations). Due to the territorial reasons – distant villages with difficult transportation and communication - we also used mobile mammography equipment. From 2007, 41 mobile excursions, that surveyed 3,364, women were made in Surgutsky district. The survey results: an absence of signs of pathology in the breast – 69.64% (2,343), fibrocystic disease – 21.53% (724), an absence of signs of pathology in the breast – 69.64% (2,343), fibrocystic disease – 21.53% (724), local pre-cancerous disease - 8.83% (297), revealed 15 cases of breast cancer (0.4%).

Conclusion: Report analysis in Ugra has demonstrated SP active implementation in a majority of municipal districts. Compared with a similar program in Moscow, in the capital of Yurga detection of breast cancer within SP is 2 times higher (0.4% of the total number of screened women over 40 years old). Data from all districts of Yurga is expected in the first quarter of 2009. Starting from 2009, Yuga Government grant will support a survey of women at risk for BRCA1 and BRCA2.

**NON PALPABLE BREAST LESIONS: CORRELATION OF BI-RADS MAMMOGRAPHY RESULTS WITH HISTOPATHOLOGICAL FINDINGS.**

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Purpose: The aim of this study was to evaluate the association between BI-RADS mammography features and histological findings in clinically non-palpable breast lesions. These types of lesions often require core biopsy or tumorectomy for their diagnosis. The classification of the American College of Radiology for the uniform description of normal or pathologic findings in breast lesions results in proper therapeutic approach with reduction of excess and unnecessary surgical procedures.

Material-Methods: We retrospectively studied 164 patients aged from 37 to 78 years (mean age 53 yrs) with non-palpable breast lesions that were diagnosed on screening mammography. Mammographically guided breast lesion localization with a Kopan needle breast localization (19G, 2cm length) was performed in all cases. Each lesion was classified according to BI-RADS system for masses (shape, margins and density) and calcifications (distribution, number and morphology.).

Results: 98 from the164 lesions were proven histological carcinomas (59.7%). According to BI-RADS classification, 53 cases (52.3%) were category 3, 64 (39%) were category 4 and 46 cases (28%) were category 5. Histological examination in category 5 lesions showed 35 (71.7%) carcinomas, 5 (10.8%) benign lesions and in 8 cases (17.3%) both benign and malignant findings were detected. In category 4, 26 cases (40%) were carcinomas, 36 (56.25%) were benign lesions in 2 cases (3.1%) both benign and malignant findings were detected. Finally in category 3, 4 cases (3.7%) diagnosed as carcinomas, 49 (92.4%) as benign and in 2 cases (3.7%) both benign and malignant findings were detected.

Conclusion: Our findings suggest a significant relationship between BI-RADS categories in non-palpable breast lesions and histopathological findings, especially in categories 3 and 5. Category 3 lesions show a high percentage value to be benign, but needs careful follow-up. Category 5 lesions seem to correlate in a high percentage with malignancy.

**SYNCHROTRON X RAY DIFFRACTION OF HAIR AS A TEST FOR EARLY DETECTION OF BREAST CANCER. STUDY FOR A NEW PARADIGM IN PRIMARY SCREENING**

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Background: Massive particle accelerators (“Synchrotrons”) using the principles of Physics have become increasingly useful in breakthrough medical research (protein analysis, viruses, drugs etc.). In 1999 James V. (Nature 398;33-34) discovered a correlation between the presence of breast cancer and a change in the Synchrotron pattern of hair from afflicted individuals. The finding was initially controversial. Some groups who attempted to repeat this work were unsuccessful because of technical difficulties associated with instruments, sample quality, handling and analysis of diffraction images.

Method: Much progress has been made since then. We here report preliminary results of 104 subjects at II° level breast screening in an ongoing blinded study. We collected 20 hairs from close to the skin of each patient ensuring that the hairs were neither dyed nor damaged. They were placed on the Synchrotron beam-line at Argonne National Laboratories, Chicago, using the now standardized method (Int J Cancer 2008;122: 847-856). We detected 31 cases (4 false negative) both early precursor and fully developed invasive breast cancer through this technique, and compared it with the gold standard (mx + us and biopsy). [Test executed by Fermiscan® USA Inc.]

Results: The preliminary trial showed results well within European Guidelines (Quality Assurance in Breast Cancer Screening and Diagnosis IV Edition).

<table>
<thead>
<tr>
<th>Biopsy Negative</th>
<th>Biopsy Positive</th>
<th>Statistical analysis</th>
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</thead>
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<tr>
<td>Synchrontron Negative</td>
<td>55</td>
<td>4</td>
</tr>
<tr>
<td>Synchrontron Positive</td>
<td>18*</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>31</td>
</tr>
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</table>

*n.10 family risk, n.14 Gail score > 1.67, 10 BiRads = R3 or +*

Conclusion: This advanced scientific method shows great promise as a simple non-invasive paradigm for primary screening. It avoids more than 45% of false positive recalls, giving thus a marked reduction of Alpha Hours (anxiety). The procedure is simple and stress free. Collection of samples from patients just requires care, and some training (20 untreated hairs from the nape of the neck). The test indicates whether the patient is clear (NPV 93%) or if the subjects need further investigation with traditional procedures.

**VALIDATION PROTOCOL OF SENTINEL NODE BIOPSY FOR BREAST CANCER USING RADIOACTIVE TRACER AT THE INSTITUTE OF ONCOLOGY BUCHAREST *PROF. DR. ALEXANDRU TRESTIOREANU***

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The sentinel ganglion concept originates in the assumption according to which the primary tumor drains into a specific ganglionar area and then runs through the lymphatic nodes in an orderly, sequential mode. When neoplastic dissemination along the lymphatic pathway occurs, there is an initial invasion of a specific lymph node (rarely more than one) located at the drainage route. That firstly lymph node has been identified as the sentinel node, which mirrors the regional ganglionar status. In order to establish the indication for lymphadenectomy and avoid the situations in which such a surgical procedure would be of no use (N-), the only correct method consists in the identification and biopsy of the sentinel node which can be performed using vital staining (blue dye), radioactive tracers or both. The technique of sentinel lymph node identification and biopsy by means of radioactive tracing includes: pre-surgical lymphoscintigraphy, - identification of the sentinel lymph node and its excisional biopsy, - intra-operative histopathological examination, paraffin embedded sections and immunohistochemical stains of the sentinel lymph node. The paper presents the refinement of the technique and the validation of the method for identification and biopsy of the sentinel lymph node in breast cancer with the intra-operative use of NEOPROBE 2006® gamma probe at the “Prof. Dr. Alexandru Trestioreanu” Oncological Institute in Bucharest. It is a prospective study which enrolled 93 patients with breast cancer st. I-IIA, who underwent sentinel node biopsy. Complete axillary dissection (back-up lymphadenectomy) was performed in all cases. By comparing the pathological results of the frozen section of the sentinel node, with the paraffin embedded and immunohistochemical ones of the remaining axillary nodes, we present the following results: sensitivity 97,13% (34/35), specificity 100% (93/93), positive predictive value 100% (34/34), negative predictive value 98,3% (58/59).
A PROSPECTIVE STUDY OF RADIOGUIDED OCCULT LESION LOCALIZATION (ROLL) AND CONCOMITANT SENTINEL LYMPH NODE BIOPSY FOR NONPALPABLE BREAST CANCER – THE FIRST ROMANIAN EXPERIENCE

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Aims: Mammography screening and increasing resolution output of mammography have raised detection of small breast lesions without clinical presence. In Romania, without organized breast cancer screening, such cases are rare and mostly discovered by chance. The aim of this study was to evaluate for the first time in Romania, in a prospective study ROLL and concomitant sentinel lymph node biopsy (SLNB).

Methods: From 135 breast lesions identified by mammography in the last year (2008) at the Institute of Oncology Bucharest, the 41 clinically occult breast cancers were guided. No additional wire localization was performed. Surgical excision was performed guided by the hand held gama probe. Sentinel lymph node was identified as an axillary hot spot on the probe.

Results: All primary lesions were identified and were clear of invasive margins excised. The average specimen weight was 40g. The sentinel node was identified in 40 cases, and in 2 cases it was tumor positive so that complete axillary dissection was mandatory.

Conclusions: Using this technique, we removed in all cases the lesions identified by mammography, achieving a complete pathologic necessary surgical treatment and also prognostic data by axillary lymph node assessment.

CARCINOMA OF THE BREAST: HISTOPATHOLOGICAL ANALYSIS AT ISRA UNIVERSITY, A TERTIARY CARE HOSPITAL, HYDERABAD, PAKISTAN

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Objective: The objective of this study was to find out the frequency and common site of breast cancer among the rural females at tertiary care hospital Hyderabad Pakistan.

Methods: A retrospective study was done by using the pathological analysis of 61 breast specimens. These specimens were received 5 years period (2004-2008) at the Department of pathology, the Isra University Hospital.

Results: Isra is the Private Tertiary Care Hospital of Hyderabad but without the oncology ward and oncologist specialists. Patients included in this study were examined by the gynecological and surgical experts for any breast disease, then they sent the whole mastectomy specimens to the pathological department for further laboratory analysis. Moreover, these patients had a history of suspected case of breast diseases such as any lump in the breast, strong history of family breast cancer, hormonal therapy etc. According to the pathological reports, we found 27 (44.26%) fibroadenoma, 10 (16.39 %) fibrocystic diseases with chronic mastitis, 4 (6.5 %) chronic supplicative mastitis (breast abscess), 2 (3.27 %) chronic cystic mastitis and 18 (29.5 %) were carcinoma of the breast. Among the carcinoma of the breast specimens examined, we found 12 (66.6%) cases with metastasis in lymph axillary nodes; common breast lesions included infiltrating duct cell carcinoma. The interesting situation was observed, the lesions seem to be all localized in the left breast, 13 patients (72.2%). Majority of the cases of infiltrating duct cell carcinoma were encountered in the 5th and 6th decades of life; the age group found in our study were ranged between 35 and 60 years. All carcinoma patients were referred to the NEMRA, Jamshoro LUMHS for the treatment.

Conclusion: This study shows that in rural Pakistani females, the most commonly encountered carcinomas of the breast were located at the left side and ductal carcinoma type. Breast carcinoma occurs in older age group with predominance of high grade lesions and with frequent lymph node metastasis. All tertiary care hospitals need the cancer ward.

A 10-YEAR UPDATE ON BREAST LESIONS IN EASTERN NIGERIA

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Background: Our population like others in Sub-Saharan Africa; appear unexplored and it is also a poorly screened population with virtual absence of mammography. Departmental records show that the prevalence of breast lesion is increasing, growing from 93 specimens in 1999 to 353 biopsies in 2006, in just 7 years. Design: 1980 breast specimens were received in our histopathology department from January 1999 to December 2007. It’s a reference laboratory catering for nearly 30 million people. These were analyzed using simple percentages.

Results: Fibroadenoma was most common n=647 (34%). It presented at a mean of 25.8 SD 4.7 years. All were palpable lumps; average size at presentation was 3.2x2.5x1.4cm. Fibrocystic change n=342 (17.3%), presented at 35 SD 5.4 years; and measured 4.2cmx2.6cmx1.6cm. Phyllodes tumor n=82 (4.1%) presented unusually early at 22.5years SD 4.6, average size 16/12x5/cm. Carcinomas of the breast had 658 (33%) with 649 females and 9 males. The mean age of male presentation was 57.2years. Female presented at 44.6years SD 6.5. 44% of the samples were mastectomies, 55% were breast biopsies; average sizes 5.64x2.5cm. The rest 251 (12.7%) were other benign lesions.

Conclusion: More investment in mammographic screening and more health enlightenment, will reduce morbidity and mortality from breast cancer. Collaborative studies, to evaluate the genetics and proteomics and immunohistochemistry to further type the cancers is important to further characterize these lesions.

A PROSPECTIVE ANALYSIS OF CANINE MAMMARY TUMORS AT VETERINARY HOSPITAL FOR EDUCATION (MAHIDOL UNIVERSITY) AND DETERMINATION OF ESTROGEN RECEPTORS AND PROGESTERONE RECEPTORS BY IMMUNOHISTOCHEMISTRY

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Mammary gland tumors are by far the most common tumors in domestic dogs. Effective therapeutic procedure with prompt accurate diagnostic effort is of prime importance for this life threatening neoplasm. Although immunohistochemical method provides valuable information as location and semi-quantitative data of some antigens in particular tumors, however, the conventional method, histopathological diagnosis is useful and necessary for identification and classification of any tumors. In the present study, we aim to correlate the histopathological study and the immunohistochemical staining of estrogen receptors (ER) and progesterone receptors (PR) in canine mammary gland tumors. Fifty patients with primary mammary tumors were underwent surgery at the Veterinary Teaching Hospital of Mahidol University from 2005 to 2007. In three of them was diagnosed premalignant lesion with negatively stained ER or PR antibody. Twenty one patients were diagnosed with benign tumor which was classified as adenoma and benign mixed mammary gland tumor. Nearly sixty percent were negatively stained for ER or PR where as PR positively stained, both PR and ER and PR stained were 19%, 19% and 5%, respectively. In case of malignant tumors, 22 patients were studied: 86% with adenocarcinoma and 14% with malignant mixed mammary gland tumors. Nearly seventy percent were negatively stained for ER or PR, where as 14% were PR positively stained. 14% were both PR and ER stained and 5% ER stained. Four patients had unidented lesion. In summary, more than half of benign and malignant mammary tumors were negatively stained for ER and PR. It might be concluded that canine mammary tumors do not correlate with estrogen and/ or progesterone expression.