

(University Halle/Germany) has been established. Ethical approval was obtained.

1. Minimal incidence data on breast cancer from the urban setting is obtained from the pathologists' case registries since 2006 in Addis Ababa.
2. Details on clinical course of breast cancer are obtained from charts of the virtually only department in Ethiopia offering systemic therapy and radiotherapy (Radiotherapy Center Addis Ababa).
3. Data on minimum disease specific mortality of cancer in rural settings is obtained by a field survey using semi-structured interviews.

#### Results:

1. At University Hospital Tikur Anbessa 8–9000 specimen are analyzed per year. Since this is by far the largest pathologic Department in the country, a thorough picture of histologically proven breast and cervical cancer in Addis Ababa is given. Basic data on histology, tumor stage, age and origin of the patient is obtained.
2. At the Radiotherapy Center >1000 patients with breast cancer were registered 2006–10. About two thirds of the patients received endocrine therapy. Clinical and pathological data is obtained as well as information on therapy. Follow-up data is collected.
3. A modified version of the 'Indepth network's' verbal autopsy (VA) questionnaire is combined with the approach of sisterhood method to interview 2500 women in rural Ethiopia. In each interview general information about the respondent's sisters were gathered. In case one of them died within the last ten years, a VA was done to identify the cause of death. Distribution of communicable and non-communicable diseases within the 200 verbal autopsies (including female cancer) is analyzed.

**Conclusions:** Oncologic diseases are emerging also in countries with limited resources. To obtain basic data on the magnitude of the problem, we collect retrospective urban and rural data from hospital based information, pathologic registries and by structured interviews.

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Poster

#### Implementation of a Digital Second Reading Center for Breast Cancer Screening Program in the French Community of Belgium

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The evolution of mammography units to digital has enforced changes in the operation of the program. In order to rationalize expenses and to centralize data, an unique Center of second reading has been created.

**Material and Methods:** The second reading Center is functional since September 2009. It has been equipped by a PACS allowing archiving of images in the original format DICOM and by a diagnosis console able to read mammograms produced by various types of equipment.

The database called 'Mammorias' (Mammography Radiology Information and Administrative System) is accessible, via a secured web interface, to all users (administrators, technologists, radiologists) with private and confidential usernames and passwords, allowing differential access to information.

The use of Mammorias by all partners in the program reduces significantly the risk of errors and allows the automatic management of multiple tasks previously performed manually (check of the consistency of reading reports, mail management ...).

When performing the digital Mammotest, administrative data and contact information of referring physicians of participating women are registered in Mammorias.

Radiologists record the result of the first reading. The pictures are transferred to the second reading Center via a secured internet connection, by sFTP or VPN procedures.

The sFTP procedure (Secure File Transfer Protocol) is manageable through simple and free software that can be set up rapidly.

The VPN procedure (Virtual Private Network) allows bidirectional transfer of images in an automated way from PACS to PACS, and enable the first reading units downloading dynamic archives stored at the second reading Center.

Both procedures require an Internet connection of an ascending flow (upload) at least 512 Kbit/s.

A link between Mammorias and the PACS allows the second readers an automatic opening of radiological images and the medical record associated, in order to realize the double reading and to save the result.

Result letters, generated by Mammorias, are sent to referring physicians within maximum 5 days.

If the Mammotest requires further investigations, a copy of the mammogram is attached to the letter on a CD-ROM.

The results can also be transmitted electronically by a secured procedure.

**Conclusion:** Management of the screening program for breast cancer in the French Community of Belgium has been considerably improved, simplified and secured through the establishment of a unique digital second reading Center.

In addition, the centralization of the double reading and archiving of radiological images is of a major interest for evaluation and training of radiologists both 1<sup>st</sup> and 2<sup>nd</sup> readers.

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#### A Subtype of Gene Expression with Claudin-low Features in Normal Breast Tissue and in Fibroadenomas

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**Background:** Increased understanding of the variability in normal breast biology and benign breast disease will enable us to identify mechanisms of breast cancer initiation and the origin of different subtypes that can better predict breast cancer risk.

**Material and Methods:** Gene expression patterns in breast biopsies from 79 healthy women referred to breast diagnostic centers in Norway were explored by unsupervised hierarchical clustering and supervised analyses, such as gene set enrichment analysis (GSE) and gene ontology (GO) analysis and comparison with previously published gene lists, and validated in independent datasets. Similar methods were used to analyze a dataset of 12 fibroadenomas collected in Akershus University Hospital, Norway and related to subtyping of breast carcinomas.

**Results:** Unsupervised hierarchical clustering of genome wide gene-expression data of the normal breast tissues identified two separate clusters, regardless of clustering algorithm and gene filtering used. Comparison of the expression profile of the two clusters with several published gene lists describing breast cells revealed that the samples in cluster 1 share characteristics with stromal cells and stem cells, and to a certain degree with mesenchymal cells and myoepithelial cells as well as the claudin-low intrinsic breast cancer subtype. A higher proportion of women belonging to cluster 1 have a family history of breast cancer and are nulliparous. The 11 fibroadenomas were subtyped and clustered unsupervised and GSE and GO analyses are ongoing and results will be presented.

**Conclusion:** We have identified distinct gene expression subtypes in whole biopsies from normal breasts and in fibroadenomas. The results are validated in separate datasets. Particularly interesting is the finding of a cluster with stromal, stem-cell like and claudin-low features. Further studies are needed to determine the specific cell contribution to the variation in the biology of normal breasts, how the clusters identified relate to breast cancer risk and their possible link to the origin of the different molecular subtypes of breast cancer.

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Poster

#### Five-year Survival and Prognostic Factors in a Cohort of Breast Cancer Patients Treated in Brazilian National Cancer Institute, Rio De Janeiro, Brazil

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**Background:** This study estimates survival rates and its the main prognostic factors related, in women with breast cancer and submitted to local and systemic treatment in Brazilian National Cancer Institute between 2001 to 2002.

**Objectives:** The purpose of this study was to analyze five-year survival and the main prognostic factors among women with breast cancer diagnosed from 2001 to 2002 that had undergone surgical treatment in the Brazilian National Cancer Institute (INCA).

**Material and Methods:** The survival curves were obtained in a hospital cohort of breast cancer with 1076 patients diagnosed and treated between 01/08/2001 and 01/12/2002, with median follow up time was 61 months (range 1 to 94 months) and mean patients age was 55,9 years (standard deviation 13,1). The Study variables were: age, marital status, tumor-related variables and the treatment-related variables. Survival functions were calculated by the Kaplan–Meier method.

**Results:** Among all patients, 23% performed neoadjuvant chemotherapy, 3% performed neoadjuvant hormone therapy and 2% performed neoadjuvant radiotherapy. A mastectomy was performed in 65%. In 84% of cases,