respectively; $p = 0.04$, Exact Wilcoxon rank-sum test). There were no differences in histological type, tumour size, grade and lymph node status between the groups.
Conclusions: Our data show that Pakistani women with early-onset triple negative breast cancer are candidates for genetic *BRCA1* testing, even in the absence of a family history of breast/ovarian cancer.

3529 POSTER

Effect of Sample Type and Turnaround Time (TAT) on the Feasibility of Non-Small Cell Lung Cancer (NSCLC) Epidermal Growth Factor Receptor (EGFR) Mutation Testing in Routine Clinical Practice: Results From the Spanish REASON Study

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Background: The presence of EGFR mutations guides treatment selection in NSCLC. Albeit Biopsy samples (s) are a gold standard for mutational analysis, they are difficult to obtain in many cases, and mutational analysis must be performed on cytologies (cyt) s instead. One of the purposes of the Spanish REASON epidemiological study was to gain insight into variables that affect the feasibility and implementation of EGFR mutation testing (tissue vs cyt and TAT) in routine clinical practice.
Material and Methods: All newly diagnosed advanced NSCLC patients in 39 Spanish centres nationwide were included prospectively for a 6-month period. Mutation testing was performed mainly through a centralized diagnostic platform that employed two central laboratories (787 s), or on-site (222 s) where EGFR mutation testing was customary (7 laboratories). Methodologies used for EGFR mutation testing were Qiagen's Therascreen EGFR PCR Kit™ (452 s), direct sequencing (89 s), fluorescent PCR fragment analysis for exon 19 deletions (del) (480 s), and allelic discrimination using fluorescence probes (450 s) or PCR enzymatic restriction (26 s) for exon 21 L858R mutation.
Results: 1009 p with available s were included in the analysis (800 tissue and 209 cyt). 15.2% of s were from non-smoking patients. 23.9% of tissue s were of squamous histology vs 16.3% of cyt. 68 s (6.7%) were inadequate for mutation analysis (6.1% tissue, 9.1% cyt). Median overall TAT was 9.7 days (9.7 days tissue, 9.5 days cyt). Median TAT for a centralized diagnostic platform was almost 7 days lower than on-site testing (8.5 days vs. 15.3 days). 941s were screened for major mutations, 504 of which were additionally analyzed for the presence of minor mutations. Mutation rates according to s type and exons analyzed are presented in Table 1.

Table 1

	Mutation rates, n (%)		
	Tissue	Cyt	Total
Major mutation rates	**N = 751**	**N = 190**	**N = 941**
Del 19 or L858R	89 (11.9)	19 (10)	108 (11.5)
Del 19	72 (80.9)	17 (89.5)	89 (82.4)
Exon 21 L858R	17 (19.1)	2 (10.5)	19 (17.6)
Minor mutation rates	**N = 394**	**N = 110**	**N = 504**
Minor mutations	15 (3.8)	7 (6.4)	22 (4.4)
Exon 18	5 (33.3)	3 (42.9)	8 (36.4)
Exon 20	6 (40)	1 (14.3)	7 (31.8)
Exon 21 (except L858R)	4 (26.7)	3 (42.9)	7 (31.8)

Conclusions: Given the similar adequacy for molecular analysis and mutation rates observed in cytological vs. tissue s, cyt seem to be amenable to mutation analysis. Moreover, mutation testing through a diagnostic platform warrants a centralized diagnostics model for implementation in routine clinical practice.

3530 POSTER

The Impact of Early Thromboembolic Event on Overall Survival in Cancer Patients

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Background: Thromboembolic events (TE) are common complication of cancer, may lead to mortality and detoriate quality of life. "Initial period", (first 3 months) after the diagnosis of cancer holds the highest risk for development of cancer-associated TE.
Material and Method: Between October 2007 to March 2011, we retrospectively evaluated the occurence of TE in patients with histologically confirmed solid tumours. The diagnosis of TE is confirmed by radiology and patients were treated accordingly. One hundred seven of 1838 patients (5.8%) were diagnosed as TE. Twenty nine of 107 patients (%27) had TE at initial period and 78 (%73) had TE at delayed (later than three months) period.
Results: There was no statistical significant relationship for age and gender between TE and non-TE groups. Forty three (41%) had distal lower extremity (DLE)deep venous thrombosis (DVT), 33 (31%) had PE and the rest includes 15 central/proximal DVT (14%), 8 PE with DLE DVT (7%), 6 central venous catheter-related DVT (5%) and 2 upper extremity DVT(2%). Frequencies for TE according to histopathology were; Non Hodgkin's lymphoma (6/36 = 16.7%), pancreatic cancer (13/79 = 16.5%), gastric cancer (18 /152 =11.8%), NSCL (adenocarcinoma) (9/82 = 11%), GBM (4/53 = 7.5%) and colorectal cancer (22/312 = 7%). Median survival was 30.5 months for TE group and 127 months for non-TE group (log-rank, p = 0.0001). Median time from diagnosis to TE was 7.25 months. Median overall survival was 15 months and 34.25 months for patients with TE at initial period and with delayed TE (log-rank, p = 0.011), respectively. The diagnosis of TE were more frequent in advanced stage (stage I-II vs stage III-IV, 13/107 = 12% vs 94/107 = 88% respectively, p = 0.0001) and with histology of adenocarcinoma (86/107 = 80% vs 21/107 = 20% respectively, p = 0.01). Odds ratio (OR) for TE in patients with adenocarcinoma histology was 1.9 [95% confidence interval (CI):1.2−3], and with advanced stage, OR was 4.35[95% CI:2.42–7.84]. OR for TE in patients with adenocarcinoma at advanced stage was 2.54[95% CI:1.44–4.49].
Conclusions: In our patient cohort, having TE at initial period, histology of adenocarcinoma and advanced stage emerged as independent prognostic factors for poor survival in cancer patients.

3531 POSTER

Urinary Bladder Cancer and Potential Risk Factors in Lebanon − a Case-control Study

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Background: Given the strikingly high bladder cancer incidence in Lebanon, estimated to be the second most common malignancy among Lebanese men, coupled with the potential effect of Phase I and Phase II drug-metabolizing enzymes on bladder cancer risk, a case control study was conducted in Lebanon to investigate the potential risk factors for bladder cancer.
Study design:159 male cases and controls (54 cases and 105 controls) were selected from two tertiary care centers in Lebanon: St. George Hospital and Bahman Hospital. Cases were men, 50 years and older, with primary confirmed bladder carcinoma. They were randomly selected as per year of reporting. Controls were hospital based, 50 years and older, with no present or previous history of cancer or any systemic illnesses. Informed consent was obtained on all cases and controls and the study gained IRB approval from the respective hospitals. Data were collected using a structured face to face interview questionnaire gathering information on history of known urinary bladder cancer risk factors such as age, family history, smoking habits, drinking, dietary habits, chronic diseases and urinary infections, use of hair dyes, and occupation. Laboratory blood testing was performed to determine N- Acetyltransferase1 (NAT1) genotype. Univariate, bivariate and multivariate logistic regression analyses were used to analyze the data, check for effect modification and control for confounders.
Study results: Results highlighted the importance of smoking, occupational exposure to fumes and vapors, prostate related diseases, as well as NAT1*14A allele as independently significant risk factors for bladder cancer. The odds of having bladder cancer among smokers was 1.02 times higher in cases than controls. The odds of occupational fumes/vapors exposure was 4.34 times higher in cases than controls. The odds of prostate related diseases was 7.8 times higher in cases than controls.

The odds of NAT1*14A allele clustering was 16.83 times higher in cases than controls. Allele genotype interaction with occupational exposure to fumes/vapors was found, however, not statistically significant.
Conclusion: This is the first case-control study on bladder cancer in the Middle East. It suggests a potential of gene-environment interaction. The observed results should be taken into consideration when setting national priorities to improve the prevention and management of this condition in Lebanon.

3532 POSTER

Uptake of Prophylactic Mastectomy And/or Salpingo-ophorectomy Among Spanish BRCA Mutation Carriers

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Background: The aim of the study is to evaluate the uptake of prophylactic mastectomy (PM) and/or prophylactic salpingo-oophorectomy (PSO) in *BRCA1* and *BRCA2* female carriers. A secondary objective is to determine the clinical predictors associated with any type of prophylactic surgery.
Material and Methods: One hundred and forty six women between 20 and 75 years old with an identified BRCA1 or BRCA2 mutation were included. These women did not have a previous cancer history, except for breast cancer. Medical and demographical data were collected in our high risk clinics between July 2005 and March 2011. This information was registered in our clinical database. Prophylactic surgery uptake was analyzed from time of genetic testing to current date. One hundred and thirty seven were eligible for analysis of PM and 111 were eligible for PSO. Univariate analysis was performed to evaluate the association between clinical and demographic characteristics and prophylactic surgery with SPSS v15.0.
Results: Median age was 44 years (20−74), 98 women (67%) had children and 61 (42%) were postmenopausal. Half of women were BRCA1 carriers and half were BRCA2. Ninety two women (63%) had a personal history of breast cancer, and 138 (94.5%) had a familial breast or ovarian cancer history. Out of 146 individuals, 98 (67%) opted for any prophylactic surgery. PM was chosen by 25/137 (18%) women at a median age of 39 (26−61) with a median time from genetic testing until PM of 7 months (1−66). PSO was chosen by 73/111 (66%) at a median age of 48 (33−71), and median time from genetic testing until PSO was 5 months (1−76). Among 102 women eligible for both surgeries 14 elected them.
No differences in PM were observed between BRCA1 and BRCA2 mutation carriers. The only clinical characteristic associated with PM was being affected by a previous unilateral breast cancer (RR = 7.5; p = 0.0001). Within the group of healthy women only 2 (4%) opted for a bilateral PM. Being parous (RR = 1.6; p = 0.015), postmenopausal (RR = 1.6; p = 0.001), older than 50 years (RR = 1.4; p = 0.009), and having been tested for BRCA after age 50 (RR = 1.5; p = 0.014) were all significantly associated with PSO. Multivariate analysis will be presented at ESMO.
Conclusions: While PSO is highly accepted among BRCA mutation carriers in our setting, only a minority of female carriers opt for PM. The reasons for the low uptake of PM warrant further study.

3533 POSTER

The Incidence and Outcome of Febrile Neutropenia in Different Chemotherapy Regimens for Cancer Patients in Belgium

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Background: The incidence of febrile neutropenia (FN) varies according the chemotherapy regimen and cancer type. In Belgium reimbursement of granulocyte-colony stimulating factors (G-CSF) in primary prophylaxis of FN is limited to 4 indications. This study aimed to provide real life information on the incidence and impact of FN in chemotherapy-cancer combinations excluded from G-CSF primary prophylaxis reimbursement.
Material and Methods: Based on ICD-9 code and drug name all chemotherapy-cancer combinations with at least one patient having an ICD-9 code corresponding to neutropenia (288.0) and/or fever (780.6) and where G-CSF primary prophylaxis was not reimbursed, were retrieved from the IMS Hospital Disease database for the period 2005–2008. This database includes longitudinal (per calendar year) information on diagnoses and drugs prescribed in about 34% of all Belgian hospital beds. Incidence of FN (cases of FN with chemo-cancer combination divided by total number of patients with this chemo-cancer combination), mortality in patients with and without FN and impact of FN on subsequent chemotherapy treatment decisions were assessed.
Results: Among the 25,544 patients at risk studied, 3,191 (12.5%) had at least one FN episode. Table 1 shows the chemo-cancer combinations with the highest incidence of FN and the mortality rates in patients with and without FN (only combinations with more than 100 patients included). Of the FN episodes 50.3% occurred during the first chemotherapy cycle. Of the patients with FN 11.4% died, 24.0% switched to another chemo regimen and 21.7% stopped treatment during the cycle with FN. A subsequent FN occurred in 26.8% of the 1,367 patients continuing the same chemo regimen.

Table 1: Chemo-Cancer combinations with the highest FN-incidence rates

Cancer	Chemo regimen	N	FN incidence, n (%)	Mortality, n (%)	
				FN	No FN
Head and neck	Cisplatin	172	43 (25)	2 (5)	6 (5)
	Cisplatin + 5-FU	115	28 (24)	1 (4)	6 (7)
Stomach	Cisplatin + 5-FU	110	24 (22)	6 (25)	7 (8)*
Oesophagus	Cisplatin + 5-FU	202	36 (18)	7 (19)	14 (8)*
Multiple myeloma	Doxorubicin + vincristin	152	26(17)	2 (8)	2 (2)
Lung	PE (cisplatin, etoposide)	292	52 (18)	11 (21)	18 (8)*
	CE (carboplatin, etoposide)	659	102 (16)	36 (35)	66 (12)*
	Etoposide	327	48 (15)	11 (23)	24 (9)*
	Cisplatin + docetaxel	132	19 (15)	4 (21)	9 (8)*

5-FU, 5-fluorouracil.
*p-value <0.05.

Conclusions: This study indicates the negative impact of FN on the course of the disease, especially in terms of mortality and treatment disruption, in indications where G-CSF primary prophylaxis was not reimbursed.

3534 POSTER

Results of the First Round of Breast Cancer and Cervical Cancer Screening Progammes in Latvia

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Background: The incidence of cervical cancer stays unchainged in Latvia during the last decade, while breast cancer incidence is increasing as well as the mortality. The main reason is the high number of advanced stage disease at the time of diagnosis. The breast cancer screening programme, using mammography, as well as cervical cancer screening using cytological analysis was initiated to diagnose the cancers earlier to raise treatment results in this field.
Methods: Population-based programmes of cervical cancer and mammography screening in Latvia were initiated in January 2009. The programmes offer cytological testing of cervical canal secretions in women aged from 25 to 70 once in 3 years, and a biennial mammography to women aged between 50 and 69. Screening is decentralised, 6 laboratories and 25 radiology units are involved in that screening. Double reading of the obtained results is mandatory according to the national policy.

BiRADS category	No. of examinations	%	C category	No. of examinations	%
R1	13658	30.16	C0	934	1.58
R2	23277	51.40	C1	29820	50.53
R3	7793	17.20	C2	26845	45.48
R4	503	1.11	C3	1190	2.02
R5	54	0.12	C4	219	0.37
			C5	8	0.013
			C6	4	0.007

Results: Selection of the target population for the screening was based on population register of Latvia. 433016 women were invited to take part in the cervical cancer screening from Jan 2009 to Dec 2010. 286785 women were invited to have screening MG from Jan 2009 to Dec 2010. 59020 (13.6%) screening cytological testings were performed, 57340 (20%) screening MG had been done. Participation varied from 12.3% to 17.4% in cervical cancer and 17.3% to 22.7% in breast cancer screening programme in different