3610 POSTER

Implementation of Insurance Coverage for Cancer Patients a Study

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Background: Although there is substantial evidence that Insurance status is important factor to access and utilization of health resources. Also economic issue influence choice of treatment and poorer survival. To adddress such a need in India this study was undertaken to estimate the burden of cancer patients taking treatment each year, percentage of patients insured, different types of Insurance coverage, estimate increase in Insurance coverage in last 3 years and trends in insurance coverage and utilization of health care resouces.
Methods and Material: The data were gathered through a computer assisted database for all adults above the age of 18 years diagnosed with cancer and taking treatment in Sri Ramachandra Medical College and Research Institute. Software Oracle was used with Acess SQL to analyse the data of patients who reported during 2008, 2009 and 2010.
A total of 4453 cases were available. The total number of cases registered for treatment in 2008 was 1250 and increased to 1437 in 2009 and further increased to 2166 by 2010. Increased in number of patients covered by insurance almost from 35% in 2008, to 47% in 2009 and 62% by 2010. The different types of Insurance coverage in these patients showed number of patients treated with private insurance in 2008, 2009 and 2010 were 128, 296 and 362. These are mainly Star Health Insurance, ICICI Lombard, Mediassist, New India insurance, etc. The governmental and non governmental insurance include Ex serviceman Insurance, Central government employees, etc were 309 in 2008, 377 in 2009 and 483 in 2010. The state governemt of Tamil Nadu introduced the Insurance scheme for Life saving treatment in 2010 under Star Health and Allied Insurance Company Limited and there were 500 new cases of cancer patients treated in last year. There is also a steady rise in private and individual insurance.
Conclusion: There is a overall increase in insurance coverage for treatment of cancer and gradual increase noted last 3 years. Also there is increase in health care utilization in all cancer subtypes. Further study on effect of this with survival, stage, gender, race, age will give us a more through knowledge and subsequently help in resource allocation, screening and prevention. This is one of the few studies of its kind from India.

3611 POSTER

Capacity Building in Palliative and Supportive Care in Georgia − Follow-up of Palliative Care National Plan for 2011−2015 − Approved by Parliament of Georgia

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Background: Currently the National Healthcare Policy is still under development in Georgia. The conception of primary care setting-oriented model, considered as priority for the end of 20th century, is gradually substituted by complex development model conception by now.
During the last years in Georgia − through the permanent collaboration of devotees with Governmental Institutions and NGOs (including International Organizations) was created the basis for the development of Palliative Care as an integral part of National Healthcare System.
We have to note that, launching of palliative care national program has led to brilliant results on the way of palliative care establishment in national healthcare systems, not only in developed countries, but also in post soviet countries of Eastern Europe and in developing countries.
The aim of the research is to identify the current status of palliative care follow-up the implementation and practical legalization of National Plan in Palliative Care and outline the challenges and the ways of its further development.
Material and Methods: All legal, clinical, education and research issues in 2010–2011 underwent to analysis.
Results: According the PC National Plan for 2011–2015, which approved by Health Care Committee of Parliament of Georgia from February 2010 in two different districts and since 2011 in one more districts of the country, was implemented Palliative Care Services. During this period 1578 patients received home and inpatient palliative and supportive care. In 29.9% (473) of cases was found challenging terminal symptoms which was fixed and solved by home based PC teams and in 43.2% (682) cases challenging problems (uncontrolled pain, dyspnea, fatigue, delirium and others) ware managed in inpatient units. More than 2300 family members received the supporting and bereavement services.
Conclusions: PC becomes non-separate part of Health Care System in Georgia. The main challenges on the way of PC development are lack of: adequate information among the society as well as potential stakeholders and decision-makers; knowledge among healthcare professionals and finances.
Prospective: Increase in the educational activities and informational campanies in cooperation of international organizations and experts; To involve more donors and sponsors and stakeholders seem to be the real ways of further development of PC in Georgia.

3612 POSTER

Cost Utility Analysis of Modified FLOX as First Line Chemotherapy for Metastatic Colorectal Cancer

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Background: Incorporation of new drugs for colorectal cancer has led to a clear improvement in patients overall survival (OS) but the added cost of treatment is a major concern worldwide. As previously described in a retrospective analysis of 82 consecutive patients (pts) in our center, modified FLOX (mFLOX) regimen is an active and feasible first line regimen in metastatic colorectal cancer (MCRC) pts, with a median OS of 19 months and clinical benefit (PR + SD) of 75.7%.
Material and Methods: In order to access cost-effectiveness of mFLOX (leucovorin-20 mg/m^2, in combination with weekly bolus 5-FU 500 mg/m^2 for 6 consecutive weeks, and oxaliplatin 85 mg/m^2 weeks 1, 3 and 5, in 8-week cycles) in comparison to mFOLFOX6, a Markov model with a 2-year time horizon and 2-week cycles was developed. Probabilities of toxicities (neutropenia, diarrhea, and neuropathy), progressive disease, overall survival and likelihood of second line therapy, were based on published literature and data obtained in our retrospective analysis. Utilities were based on the available literature data. Costs for physician, hospital services and drugs were derived from DATASUS, ANVISA and local resources. The analysis took a Brazilian government perspective. Health outcomes were measured in quality-adjusted life years (QALYs). To address uncertainty in model parameters, one-way sensitivity analyses were performed. Costs and utilities were discounted at 5%. Even producing similar Kaplan–Meier curves, it was assumed that mFLOX was 20% inferior to mFOLFOX6 in terms of efficacy and that the median time on first line therapy was 20 weeks.
Results: The mFLOX regimen had a cost of BRL 9,000 (1 BRL = 2.29 EUR) and mFOLFOX6 BRL 22,000 leading to an incremental cost of BRL 13,000, considering a 20-week duration of first line therapy. The incremental effect of mFOLFOX was of 0,117 QALY. The incremental cost-effectiveness ratio of mFOLFOX6 was of BRL 110,344/QALY. In 10,000 probabilistic Monte Carlo simulations mFLOX was cost effective in 60% of trials using a threshold of BRL 100,000/QALY. No differences in outcome measures were detected with sensitivity analysis.
Conclusions: The mFLOX regimen is not only active, but also cost-effective as first line chemotherapy in MCRC, especially in scarce resources scenarios. This regimen must be explored in larger prospective studies.

3613 POSTER

Health Resource Utilization (HRU) Associated With Skeletal-related Events (SREs) by Tumour Type in Patients With Bone Metastases/lesions: European Analysis of a Prospective Multinational Observational Study

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Background: Bone metastases/lesions are commonly associated with SREs and are likely to result in increased patient morbidity. Future resource requirements and estimation of the value of new treatments to prevent/delay SREs require data on the patient and economic burden. However, there is paucity of prospective data in this regard in the literature.
Material and Methods: Eligible patients had bone metastases secondary to breast (BC), lung (LC) or prostate cancer (PC) or multiple myeloma (MM) and were required to have had at least one SRE within 90 days prior

to enrollment. HRU data associated with SREs (spinal cord compression, surgery to bone, pathologic fracture or radiation to bone), as attributed by investigators, were collected retrospectively for 90 days prior to enrollment and prospectively for up to 18−21 months. HRU included number and length of inpatient hospitalisations, outpatient visits, emergency room visits, nursing home/long-term care facility stays, home health visits, procedures and certain medications. These data are from centres in Germany, Italy, Spain and UK.

Results: Of the 631 European patients 223 (35.3%) had a primary diagnosis of BC, 135 (21.4%) LC, 120 (19%) PC and 153 (24.3%) MM. There was limited variation in HRU across tumour types (Table) although HRU varied by country (ranges) due to different treatment approaches.

Cancer type (SREs)	BC (457 [47–180])	LC (214 [31−63])	PC (222 [34−97])	MM (281 [43–109])
% of SREs requiring inpatient hospitalisation	23–27.8	29–47.6	20.6–29.1	33.3–41.9
Length of stay per SRE, days (SD)*				
Mean	12.9 (12.3)–	16.4 (11.3)–	16.3 (11.2)–	16.5 (10.9)–
Median	27.2 (24.8)	20.1 (14.2)	25.9 (14.3)	25.5 (36.4)
	8.0–17.0	17.0–20.0	15.0–21.0	11.5–14.5
% of SREs requiring outpatient visits	68.1–82.0	58.3–83.9	74.5–82.4	60.5–71.2

*SREs with inpatient hospitalisation; ranges are for intercountry variation

The least common SRE requiring hospitalisation, radiation to bone (BC 6.9–11.4% of 279 events; LC 20.8−50% of 140 events; PC 4.5–23.3% of 166 events; MM 6.7–17.9% of 107 events), was still associated with mean in-patient length of stays ranging 2.0–29.9 (16.2) days across all tumour types and countries.

Conclusions: SREs can lead to lengthy hospitalisations and outpatient visits in patients with bone metastases/lesions. Although HRU was generally similar across tumour types, there is a trend to a higher percentage of SREs requiring hospitalisation in LC and MM. Preventing SREs across all cancer patients is important to substantially reduce the burden of hospitalisation for patients and of costly HRU across European healthcare systems.

3614 POSTER

HRQoL in Different Health States of Colorectal Cancer

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Background: This study was conducted to assess the health-related quality of life (HRQoL) for different health states in colorectal cancer (CRC) and to explore factors determining HRQoL as well as to compare different HRQoL instruments.

Material and Methods: An observational cross-sectional study among CRC patients in the Helsinki and Uusimaa hospital district was carried out between September 2009 and December 2010. A total of 502 CRC patients (aged 26−96; colon cancer 56.4%; female 46.8%) assessed their HRQoL with the generic 15D and EQ-5D and the cancer specific EORTC-QLQ C30 questionnaires.

Patients were divided into five mutually exclusive groups based on disease state: baseline before treatment, 1st year after diagnosis or recurrence, 2nd or following years of remission, metastatic disease and terminal care. Linear stepwise regression analysis was used to evaluate the association between the VAS score and clinical and demographic factors and the EORTC scales for symptoms and functioning.

Table 1. The mean HRQoL scores of the CRC patients in different health states

	Baseline (n = 51)	1st year (n = 87)	Remission (n = 212)	Metastatic disease (n = 110)	Terminal care (n = 42)
15D score	0.890 (0.091)	0.879 (0.099)	0.885 (0.106)	0.860 (0.090)	0.756 (0.143)
EQ-5D index value	0.764 (0.228)	0.829 (0.203)	0.849 (0.205)	0.824 (0.194)	0.644 (0.307)
EORTC C30 Global Health Score	65.84 (21.61)	72.89 (20.61)	75.31 (22.11)	68.96 (20.72)	55.15 (19.90)
VAS score	69.40 (21.52)	75.75 (19.73)	78.82 (18.10)	74.44 (17.81)	58.09 (22.14)

Results: The 15D provided the highest utility values, whereas EQ-5D, VAS and EORTC Global Health were lower in each state. Utility scores provided by EQ-5D, VAS and EORTC C30 improved after diagnosis and were highest in the remission state whereas 15D scores were highest in the baseline state (Table 1). Largest differences between the instruments were seen in baseline and terminal care states. Most 15D dimensions deteriorated with advancing severity of disease with most marked decline seen in “usual activities”. In regression analysis poor HRQoL measured by VAS was significantly associated with female sex, dysponea, fatique and diarrhea while emotional and role functioning predicted better scores.

Conclusions: CRC has clear impact on patients’ HRQoL. The effect is most evident within baseline and terminal care patients, but results vary between HRQoL instruments. Regression analysis showed that female sex, symptoms and functional capacity have more impact on HRQoL than clinical factors.

3615 POSTER

A Pharmacoeconomic Model of Personalized Chemotherapy for Primary Breast Cancer Based on Cross-activity Analyses Using an Ex Vivo Chemosensitivity Assay

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Background: During the last two decades, the costs of chemotherapy (Ctx) for primary breast cancer (PBC) have been dramatically increased mainly due to the use of expensive drugs. It is unclear however, which individual patient (pt) is likely to befit from such a Ctx compared to a less expensive one. We therefore developed a pharmacoeconomic model of personalized Ctx for PBC using the results of cross-activity analyses of standard Ctx regimens (Ctx-R) in the *ex vivo* ATP-based chemosensitivity assay (ATP-TCA).

Methods: Eight Ctx-R were studied in a total of 96 native PBC samples: epirubicin (EPI); mitoxantrone (MXN); paclitaxel (PCT); docetaxel (DCT); CMF, 4-OH-cyclophosphamide (4-HC)+methotrexate (MTX)+5-fluorouracil (5-FU); EC, EPI+4-HC; ET, EPI+PCT; NT, MXN+PCT. Each Ctx-R was tested at a 1.5 log dose range. Using a semiquantitative score, the individual chemosensitivity was classified as complete, incomplete, or resistance. Eight head-to-head comparisons were made: CMF vs EC, n = 56; CMF vs PCT, n = 49; CMF vs DCT, n = 34; EC vs PCT, n = 51; EC vs DCT, n = 35; EC vs ET, n = 45; ET vs NT, n = 24; PCT vs DCT, n = 34. For every comparison, the assumed cost reduction if using ATP-TCA directed Ctx was calculated for the tested population in regard to the German prices of both Ctx and supportive medication and the costs for the ATP-TCA, as well.

Results: CMF was at least equal to EC in 47 (84%), to PCT in 37 (76%), to DCT in 29 PBCs (79%). EC was at least equal to PCT in 41 (80%), to DCT in 28 (80%), and to ET in 28 PBCs (62%). NT was at least equal to ET in 19 PBCs (79%), and PCT was at least equal to PCT in 27 PBCs (80%). The calculated potential cost reduction by personalized ATP-TCA directed Ctx ranged between € 457 (PCT vs DCT) and € 18.847 (CMF vs DCT) per treatment. Regarding the whole study population, the potential cost reduction ranged between € 2.550 (PCT vs DCT) and € 611.819 (CMF vs DCT). Assuming a total of 30.000 newly diagnosed PBC pts per year subjected to Ctx in Germany, the extrapolation of our data would lead to a potential yearly cost reduction of around 75–240 million € if every pt would receive personalized chemotherapy.

Conclusions: Our results are in good agreement with clinical studies showing that novel Ctx-R will benefit only a limited proportion of PBC pts. Systemic analyses using biological methods like the ATP-TCA could help to identify individual pts who are likely to benefit from costly Ctx whereas the remainder could be equally subjected to less expensive or less toxic Ctx-R. Depending on the particular comparison made in this study, the use of ATP-TCA based personalized Ctx could lead to a considerable cost reduction in the treatment of PBC.

3616 POSTER

The Relationship Between Volume or Surgeon Specialty and Outcome in the Surgical Treatment of Lung Cancer − a Systematic Review and Meta-analysis

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Background: Whether improvement of quality and increased cost-effectiveness of surgical cancer care can be achieved by centralising care