

therapy. **METHODS:** Medical records of 220 patients with metastatic SCCHN who received ≥ 3 lines of systemic therapy were abstracted. Clinical and demographic information at metastatic diagnosis as well as treatment and supportive care data were collected for patients ≥ 18 years initiating third-line systemic therapy between 1 January 2011 and 30 August 2014. Performance status (PS) was recorded prior to each line of therapy. SCCHN-related HCRU was captured until death or last medical record. All analyses were descriptive. **RESULTS:** Most patients were Caucasian (90%), male (74%), current or former smokers (85%), with an initial SCCHN diagnosis of stage IVC (52%). Median age at metastatic diagnosis was 60 years and most patients had an Eastern Cooperative Oncology Group (ECOG) PS of 0 or 1 (208/217=96%). For patients with PS=0/1, the most common first-line treatment was cisplatin+5-FU (98/208=47%); docetaxel was the most common second-line (85/177=48%) and third-line treatment (30/117=26%). For patients with PS ≥ 2 , the most common first-, second-, and third-line treatments were carboplatin+5FU (5/9=56%), cetuximab (12/38=32%), and methotrexate (21/95=22%), respectively. Four patients (2%) received 4 therapy lines while no patient received ≥ 5 lines. Seven patients (3%) received radiation and/or surgery for metastatic disease. Most patients received supportive care during therapy (85%) and after its discontinuation (89%). SCCHN-related hospitalizations and emergency department visits were reported for 27% and 20% of patients during therapy, respectively (vs. 10% and 16% after therapy discontinuation). Median survival after metastatic diagnosis was 25.6 months. **CONCLUSIONS:** Patterns of care and HCRU varied among patients with repeatedly treated metastatic SCCHN; specific systemic therapies varied by PS. Factors associated with HCRU will be examined in future multivariate analyses.

PCN121

CLINICAL, MEDICATION AND ECONOMICAL OUTCOME RESEARCH OF ADVANCED COLORECTAL CANCER RELAPSE USING REIMBURSEMENT AND CANCER REGISTRY DATABASES

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OBJECTIVES: This study aims to evaluate the clinical, medication and economic outcome among advanced CRC patients who were relapsed to metastasis in Taiwan using reimbursement and cancer registry databases. **METHODS:** The outcome data was form 2 million sampling reimbursement data base of Taiwan's National Health Insurance Research Database (NHIRD) and diseased stage was derived from the Taiwan Cancer Registry (TCR) between 2007 and 2011. Diseased stage diagnosed for the first time ever of CRC patients was recorded in TCR. Merged database was provided by Health and Welfare Statistics Application Center (HWSAC), Ministry of Health and Welfare, Taiwan. Metastasis relapse of the advanced CRC patients was identified if the patients were prescribed the approved target therapies, i.e. Avastin or Erbitux. Descriptive statistics were derived and summarized; Cox regression was used to estimate the difference of the relapse proportion and mortality. **RESULTS:** After eliminating the other previous cancer coded in the database, and non-reported diseased stages in the merged database, 2,477 patients were derived and enrolled into the analysis. Relapse rates were 5.8% and 19.2% among stage III and IV CRC patients with median relapse days of 590 and 437. Mortality rates were 21.9% and 64.6% with median survival days of 765 and 652. Comparison of the relapse rates among different stages was statistical significant with $p < 0.0001$. Overall costs were estimated as an average of 103,616 and 162,714 USD per person during the first year since diagnose. **CONCLUSIONS:** Relapse to metastasis stage and mortality rate in advanced CRC are still high and estimated medical expenditure increased 57% between stage 3 and stage 4 and is possibly due to the high metastasis relapse rate.

PCN122

THE MANAGEMENT AND COSTS OF LOCALLY ADVANCED OR METASTATIC ALK-POSITIVE NON-SMALL CELL LUNG CANCER IN GREECE

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OBJECTIVES: To map the current treatment pathway and resource use in advanced/metastatic ALK+ non-small cell lung cancer (NSCLC) in Greece, and estimate the impact of adding ceritinib in the future treatment pathway. **METHODS:** An expert panel of 7 leading oncologists was convened in order to map the local treatment pathway and resource use for ALK+ NSCLC. Published sources provided unit costs from the perspective of the Social Insurance Fund (SIF). Direct medical costs were included in the analysis: pharmaceutical, medical and hospital care, lab and imaging tests, accompanying treatment, and management of AEs and brain metastases for all four lines of treatment. Cost base year was 2014. The analysis estimated treatment duration based on progression free survival (PFS) from published literature and controlled for estimated brain metastasis frequency by treatment. **RESULTS:** The current treatment pathway in Greece for the management of ALK+ NSCLC utilizes 1st line chemotherapy followed by crizotinib, chemotherapy, and palliative care in 2nd, 3rd and 4th lines of treatment, respectively. The most widely used 1st line chemotherapeutic regimen is carboplatin or cisplatin plus pemetrexed (73% of patients); the most commonly used 3rd line chemotherapeutic agent is docetaxel (83% of patients). The average per patient cost in the current treatment pathway was estimated at €67,672, based on a 20-month treatment duration adjusted for median PFS. The costs associated with future scenario 1 (crizotinib, ceritinib, chemotherapy, palliative care -treatment duration adjusted to 26 months) and future scenario 2 (chemotherapy, ceritinib, chemotherapy, palliative care -treatment duration adjusted to 29.3 months) were €93,113 and €105,609, respectively. All cost estimates assumed completion of all four lines of treatment and all treatment cycles in each line. **CONCLUSIONS:** Ceritinib in the 2nd line treatment of ALK+ NSCLC leads to an increase in total health care costs due to improved survival which produces longer treatment duration.

PCN123

ESTIMATION OF DIRECT MEDICAL COSTS ASSOCIATED WITH TREATMENT OF METASTATIC MELANOMA IN SWITZERLAND

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OBJECTIVES: Metastatic melanoma is a rare, but aggressive disease that accounts for 90% of deaths related to skin cancer. The objective of this project was to estimate average direct medical costs associated with treatment of metastatic melanoma in a population of Swiss, adult patients from a third-party payer perspective. **METHODS:** Direct medical costs of drugs and services were estimated for the following components: Pharmacotherapy; physician visits; inpatient stays; outpatient visits; laboratory tests; imaging and other procedures. Unit costs were based on 2015 list prices in Swiss Francs (CHF) and derived from the Swiss official tariff schedule (TARMED) for outpatient-related costs, Swiss diagnosis-related group (DRG) tariffs for inpatient-related costs, the Swiss Federal Office of Public Health for laboratory tests and the Swiss drug Compendium for prescription drugs. Estimated average cost per patient was population-weighted and reported for three mutually-exclusive designed health states: Pre-progression, progression and post-progression. Estimates of the utilization of services and the units of service received were based on published literature and a survey of Swiss physicians treating melanoma. **RESULTS:** For pharmacotherapy, the estimated cost for a full treatment course was 79'986.09 CHF for ipilimumab, 104'311.59 CHF for vemurafenib, and 1'329.89 CHF for dacarbazine. For parenteral drugs the cost of administration for a full treatment course was 1'408.73 CHF for ipilimumab and 2'077.22 CHF for dacarbazine. Average monthly cost for neurosurgery was 1'101.03 CHF during progression. Outpatient visits accumulated an average per month of 27.40 CHF during pre-progression, 92.40 CHF during progression and 170.23 CHF during post-progression. Other melanoma-related costs (laboratory tests and scans) comprised on average 140.70 CHF per month during pre-progression and 1'182.37 CHF per month during progression. **CONCLUSIONS:** Based on list prices, direct medical costs associated with metastatic melanoma treatment were estimated and reported for patients in an adult, Swiss population.

PCN124

ADDITIONAL COST OF VTE IN PATIENTS WITH CANCER: AN APPROACH BASED DATABASES

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OBJECTIVES: VTE (venous thromboembolism) are among the frequently associated with malignant disease events which requires hospitalization and could generate extra costs for the health insurance. There is no French studies analyzing the additional costs induced by VTE and cancer. The objective of this study is to provide an estimation of the additional cost induced by VTE + cancer from the analysis of hospital stays extracted from PMSI 2013 (French Hospital Database) for 4 types of cancer (breast, lung, hepatocellular carcinoma and colon). **METHODS:** A crossed approach of Principal Diagnosis (DP) and Comorbidities (DAS) was performed to identify all stays combining VTE and cancer. The analysis is divided into 3 parts: a descriptive approach of hospital stays for VTE + cancer, an analysis by severity level of DRG and an economic valorization based on the National Cost Scale. It was not achieved PMSI extraction to create a comparison population for each type of cancer because the creation of such a population could be a mood point, in particular because of other comorbidities may also generated additional costs (eg infection). Public ATIH database was used. The essential approach of this study is based on analysis of the distribution of stays according to levels of severity DRG. **RESULTS:** 14,251 stays were analyzed combining VTE and cancer. Stays for VTE + cancer represented 81.7% in the severity levels 3 and 4. For example, the average cost of lung cancer in cancer patients + VTE (PMSI extraction) is € 7,296 against € 4,647 for this cancer in ATIH database. A multiplying factor is estimated: 1.57 in lung cancer, 1.5 for breast cancer, 1.34 in colon cancer and 2.01 for hepatocellular carcinoma. **CONCLUSIONS:** The economic justification for the use of preventive treatment of VTE is here in line with clinical guidelines.

PCN125

INTERMEDIATE AND ADVANCED HEPATOCELLULAR CARCINOMA MANAGEMENT IN FOUR ITALIAN CENTERS: PATTERNS OF TREATMENT AND COSTS

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OBJECTIVES: Hepatocellular carcinoma (HCC) is the fifth most common malignancy worldwide imposing high hospitalizations and mortality rates and a relevant economic burden. Objective of the present analysis is to investigate treatment pathways and healthcare costs for intermediate and advanced HCC patients (Barcelona Clinic Liver Cancer Classification (BCLC) stage B and C). **METHODS:** Structured interviews with gastroenterologists and interventional radiologists were performed in four Italian centres experienced in HCC management. Information on disease stage, diagnostic procedures, treatments and healthcare resource consumption related to HCC were recorded. Direct healthcare costs associated with relevant treatments (sorafenib, Transarterial chemoembolization (TACE), transarterial radioembolization (TARE) systemic treatment) were evaluated. **RESULTS:** Between 2013 and 2014, 285 patients with HCC (mean age 66 years, 74% males) were treated in the 4 participating centres; of them, 80 were classified in the intermediate stage and 57 in the advanced stage. TACE was the most frequent first-line treatment in intermediate stage HCC (63%), followed by sorafenib (15%), radiofrequency ablation (14%) and TARE (1.3%). In the advanced stage of HCC the most frequently used first-line therapy was sorafenib (56%), followed by best

supportive care (21%), TACE (18%) and TARE (3.5%). The mean duration of treatment with sorafenib (a total of 137 patients) was 6.1 months; the average number of TACE and TARE sessions was 2.5 and 1.5 procedures/patient, respectively. The total costs of treatment per patient amounted to 12,215€ for sorafenib, 13,419€ for TACE and 26,106€ for TARE; variability in treatment patterns among centres was observed. **CONCLUSIONS:** The present analysis raises for the first time the awareness of the overall costs incurred by the Italian National Healthcare Service for different treatments used in intermediate and advanced HCC highlighting the need for future research and analysis of the cost-effectiveness of TACE alone or combined with sorafenib, in the treatment of HCC.

PCN126

ECONOMIC BURDEN OF PATIENTS WITH ALK+ MUTATION NON-SMALL CELL LUNG CANCER AFTER TREATMENT WITH CRIZOTINIB: A CANADIAN RETROSPECTIVE OBSERVATIONAL STUDY

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OBJECTIVES: Non-small cell lung cancer (NSCLC) accounts for 85-90% of all lung cancers. Anaplastic lymphoma kinase (ALK) gene rearrangement mutations are found in 4-7% of NSCLC tumours. Crizotinib is indicated for treatment of patients with ALK-positive (ALK+) advanced or metastatic NSCLC. However, patients eventually progress/develop resistance over time. There is limited evidence on the economic burden among Canadian ALK+ NSCLC patients who discontinue crizotinib. **METHODS:** A chart review study was conducted to assess treatment patterns, resource utilization and associated costs among patients with locally advanced or metastatic ALK+ NSCLC, diagnosed 2010-2015, who were intolerant to or progressed on crizotinib treatment. Data were collected from medical charts from six Canadian oncology centres. Cost estimates were calculated using a 'bottom-up' approach, where frequency of utilization, retrieved by type and frequency, was multiplied by each resource unit cost. Costing was performed with the public payer's perspective, and as ceritinib was approved in March 2015, associated costs were excluded. **RESULTS:** A total of 97 charts were included, with 49 crizotinib-failures, 9 crizotinib-naïve and 39 ongoing crizotinib treatment. Among those who failed crizotinib treatment, mean age at diagnosis was 53 years, with 53% female, 53% Caucasian, and 67% non-smokers. Treatment patterns post crizotinib in any line of treatment was ceritinib (43%), targeted therapy (6%), platinum doublets (23%), single agent chemotherapy (23%) and no further systemic treatment (41%); 35% and 33% of patients received concurrent palliative care and/or radiotherapy, respectively. Median overall survival in patients who received non-ceritinib treatment was 1.7 months. Total mean cost for completed systemic treatment post crizotinib was \$16,473/patient, excluding ceritinib costs. Other costs included palliative care and radiotherapy. Mean monthly cost for resource use was \$4,382/patient. **CONCLUSIONS:** Treatment patterns post crizotinib were heterogeneous. Estimated economic burden in patients who received active treatment remains significant despite their poor prognosis.

PCN127

RESOURCE USE AND COST OF CHEMOTHERAPEUTIC TREATMENT FOR METASTATIC BREAST CANCER IN THE NETHERLANDS

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OBJECTIVES: To analyse chemotherapeutic treatment duration, resource use and cost per treatment line in metastatic breast cancer (MBC) patients in the Netherlands. To analyse lifetime chemotherapy cost and which patient and disease characteristics influence it. **METHODS:** A database containing information on treatment, disease and patient characteristics of 815 MBC patients was analysed. Inclusion criteria were: having a confirmed MBC diagnosis and having received at least one chemotherapy administration after MBC diagnosis. On and off treatment duration, number of administrations and mean cost were aggregated for each regimen in each treatment line. Chemotherapy costs of each regimen in each line were corrected for censoring through the Lin's method. Corrected costs were used to calculate treatment line costs and lifetime cost. A generalised linear model was used to assess the influence of patient and disease characteristics on lifetime chemotherapy cost. **RESULTS:** Total chemotherapy line durations and off treatment durations were highly variable and decreased across treatment lines. Taxane-based chemotherapies (docetaxel and paclitaxel) were the most often used regimens in the first two lines of treatment. Afterwards, capecitabine, vinorelbine and gemcitabine were more often used. The fifth treatment line was the most expensive (mean: €9,501, range: €555 - €31,864), followed by the first line (mean: €4,454, range: €381 - €47,872). Mean lifetime costs was €7,360 (range: €381 - €73,512) and was significantly influenced by age and metastatic sites at metastatic diagnosis. **CONCLUSIONS:** There is a high variability in chemotherapy treatment duration, resource use and cost between and within treatment lines. Lifetime chemotherapy cost was influenced by metastatic sites and age at metastatic diagnosis. Patient and disease characteristics and treatment line number are therefore important when determining the cost of chemotherapy for MBC. Consequently, (model-based) economic evaluations should incorporate more detailed cost estimates concerning chemotherapeutic treatment for MBC.

PCN128

PROSTATECTOMY: A COMPARISON OF COST-BENEFIT ANALYSIS BETWEEN OPEN SURGERY AND ROBOTIC TECHNIQUES

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OBJECTIVES: Among the therapeutic practices for prostate cancer, open-surgery is the most frequent technique. Recent studies have shown that robotics allows a recovery of the function more rapid than the classic open-surgery, although the

costs are not yet clear. Purpose of this project is to explain from the economic point of view about the future urologic surgery. **METHODS:** In order to analyse the laparotomy and robotics techniques, we approached costs and revenues. The formers are standardized for each kind of surgery, starting from a common case study led by the two hospitals of Modena. The latter are extracted punctually from the internal database. Finally we focused on the benefits and complications for the patients for the two kinds of techniques. **RESULTS:** In 2014 the hospitals have provided 91 robotic surgeries and 25 in open-surgery. Revenues for robotic activities are about 623,539€ while those for open-surgery are 162,045€, with an average value for each patient respectively of 6.852€ (A) and 6.481€ (B). The average hospitalization for robotic activities is about 6 days, versus the 10 days for the open-surgery. From the analysis above, the costs of robotics are about 6.000€ (D), while the open-surgery 2.000€ (E). Average income of robotics (A), standardized to average hospitality (from 6 to 10 days), gives an amount of 11.420 € (C). Comparing (C) with (B), the 4.000€ of marginality equals the gap between (D) and (E). **CONCLUSIONS:** The results show no economic differences between the two techniques. However, according to clinical point of view, the strong clinical benefits of robotics are evident. As explicated by the literature, the accuracy of robotics technique, combined with a more rapid learning curve, guarantee a more rapid recovery of urinary tract functionality. Despite the goodness, the simulated analysis embeds limits: there is no warranty of transferability.

PCN129

HEALTH-ECONOMIC COMPARISON OF A GnRH-ANTAGONIST (DEGARELIX) VS. GnRH-AGONISTS CONSIDERING THE NUMBER-NEEDED-TO-TREAT TO AVOID CARDIOVASCULAR EVENTS

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OBJECTIVES: Recent studies suggest that Androgen-Deprivation-Therapy is associated with increased risk for patients with hormone-sensitive prostate cancer (PCa) and pre-existing cardiovascular (CV) disease. Hereunder, the slightly more expensive GnRH-antagonist shows a beneficial risk profile over GnRH-agonists. Therefore the objective of the present study was to assess the cost-effectiveness of degarelix compared to GnRH-agonists for PCa-patients with pre-existing CV disease. **METHODS:** This analysis is based on a pooled analysis of six Phase III-RCTs comparing GnRH-agonists with degarelix addressing CV-events in PCa-patients (Albertsen et al.2014). For the combined endpoint of CV-events or death a superiority of degarelix was determined with a Number-Needed-to-Treat (NNT) of 12. From German sick funds perspective, this study estimates and validates the additional degarelix drug costs to the cost of one (avoided) CV-event. The CV-event costs were estimated via emergency treatment, inpatient hospital treatment and rehabilitation. The difference of these two cost pools divided by 12 (patients) yields the average saving per patient and year. To validate the robustness of results, sensitivity analyses were performed for choice of comparator, variations in the NNT (number of included studies and study length) and real world cost data. **RESULTS:** Compared to the most commonly prescribed GnRH-agonist (Trenantone) additional drug costs for degarelix amount to €3,111 for the treatment of 12 PCa-patients. For the prevention of one CV-event average savings of €8,297 are generated. Hence, average savings of €432/year/patient are generated. While examining only studies with CV-events (NNT=11) or when assuming the same length of all studies (NNT=13) savings amount to €495 and €379, respectively. Switching to compare to the cheapest comparator or taking into account CV-event real world cost data (€9,392 per event) savings of €62 and €523 are generated, respectively. **CONCLUSIONS:** Degarelix is cost-effective for PCa-patients with increased CV-risk compared to GnRH-agonists, also under consideration of various sensitivity analyses.

PCN130

COLORECTAL CANCER: THE IMPORTANCE OF BEING RIGHT - A MODEL INVESTIGATING THE IMPACT OF BOWEL CLEANSING ON ADENOMA DETECTION IN A GERMAN SCREENING POPULATION

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OBJECTIVES: Through the earlier detection and removal of cancerous and precancerous adenomas, colorectal cancer (CRC) screening aims to reduce both the risk to individuals and burden on healthcare systems. Inadequate bowel preparation prior to colonoscopy correlates with a higher rate of missed adenomas, especially in the right colon. The differential cost and efficacy of available bowel cleansing products mean that healthcare providers are faced with a decision that has both economic and public health consequences. A model was therefore constructed to investigate the long term benefits of adequate bowel cleansing. **METHODS:** The cost-consequence model compares the total cost of colonoscopy, and treatment of subsequent CRC, over a 10 year time horizon in a cohort of 10,000 patients aged ≥55 years receiving either 4L of polyethylene glycol (4LPEG), 2L of PEG with ascorbate (2LPEG+ASC), or 1L of sodium picosulphate with magnesium citrate (NaPic/MgCit) prior to colonoscopy. Rates of successful bowel cleansing, completed colonoscopies, and adenoma detection rate (ADR) were obtained from clinical trial data, together with published rates of surveillance colonoscopy, associated costs, and healthcare resource utilisation in Germany. **RESULTS:** In the model, poor compliance with the higher volume 4LPEG leads to a lower rate of completed colonoscopies, and more missed adenomas than with lower volume 2LPEG+ASC. Moreover, the superior compliance and higher ADR achieved using 2LPEG+ASC, particularly in the right colon, results in more cases of CRC prevented over 10 years than 4LPEG and NaPic/MgCit (25 and 113 more cases, respectively). Through a decrease in treatment of CRC, this equates to an average overall cost saving of €213 and €625 per patient, respectively, over 10 years. **CONCLUSIONS:** Optimisation of bowel cleansing prior to colonoscopy is likely to increase the detection (and removal) of cancerous and precancerous adenomas, which may reduce the development of CRC, avoid treatment costs, and reduce mortality.