

SUNDAY, SEPTEMBER 2ND 2012

122. Looking at the cost effectiveness of asthma and COPD treatment by novel drugs and improved management

P1291

Clinical and socioeconomic profile of asthmatic patients treated in a tertiary/university hospital in Brazil

Rogério Rufino¹, Eduardo Costa², Mauricio Bregman¹, Claudia Costa¹, Denizar Vianna². ¹*Pulmonology Unit, State University of Rio de Janeiro, Rio de Janeiro, Brazil;* ²*Internal Medicine Department, State University of Rio de Janeiro, Rio de Janeiro, Brazil*

Introduction: Bronchial asthma has a high prevalence, morbidity, and impact on quality of life worldwide. Its associated costs are still unknown in Brazil.

Objective: The aim is to describe clinical and socio-economic characteristics of asthmatic patients in treatment in specialized units at a public university hospital in Brazil as part of a cohort study on costs of asthma treatment.

Methods: It's a cohort study of patients above 6 years of age with persistent asthma, which were interviewed 2 times with 6 months interval using a standardized instrument to collect data.

Results: 117 asthmatics were enrolled (72.6% of female gender). Average age was 44.3 years (SD=20.7) and average mensal family income was US\$ 766.50 (SD=616.54). The average duration of asthma was 23.2 years (SD=17.5) and 103 patients (88%) has had associated rhinitis. 59 patients (50.4%) had mild, 42 (36%) had moderate and 16 (13.6%) had severe asthma and 43.6% of all patients had their asthma well controlled, 37.6% were partially controlled and 18.8% were not controlled. All patients were using daily medication to control asthma. Only 30.7% had money expenditures for allergen avoidance measures.

Conclusions: We discovered a low income profile among patients. Due to the low level of organization of Brazilian Health System a great proportion of mild asthmatics are treating their disease in a tertiary hospital. Although all patients are using some control medication, almost 1/5 of them were not controlled. Rhinitis is a frequent co-morbidity probably influencing the severity and control of disease. A low proportion of patients are using immunotherapy and making allergen avoidance measures.

P1292

A UK based cost-utility analysis of indacaterol – A once-daily maintenance bronchodilator for patients with COPD

Yumi Asukai¹, Jaithri Ananthapavan¹, Bill Malcolm², Amr Radwan³, Ian Keyzor⁴. ¹*Health Economics and Outcomes Research, IMS Health, London, United Kingdom;* ²*Scientific Operations, Novartis Pharmaceuticals UK Limited, Surrey, United Kingdom;* ³*Clinical Development & Medical Affairs, Novartis Pharmaceuticals UK Limited, Surrey, United Kingdom;* ⁴*Health Economics and Outcomes Research, Novartis Pharmaceuticals UK Limited, Surrey, United Kingdom*

Introduction: COPD is a chronic incurable disease; however, there are effective treatments available. In the UK, long-acting bronchodilators are first-line treatments for COPD patients requiring maintenance therapy, and there are several options available.

Aim: To establish from the UK NHS perspective, the cost-effectiveness (CE) profile of indacaterol, the first once-daily LABA, compared to tiotropium and salmeterol, in patients with moderate to severe COPD.

Methods: A Markov model was developed with four health states describing the GOLD severity stages. From each of the states, patients could experience a severe or non severe exacerbation, move to a different COPD state, remain in the current state or die. Transition probabilities were based on data from the indacaterol clinical trials. Cost and resource use data was taken from UK based sources, published literature and expert opinion. Sensitivity analyses (SA) were also conducted.

SUNDAY, SEPTEMBER 2ND 2012

Results: Indacaterol dominates both tiotropium and salmeterol over a 3-year time horizon with a cost saving of £137 and £289 respectively. The one-way SA indicated that the time horizon and the mortality rate associated with very severe COPD had the largest impact on the results. The probabilistic SA showed that over 75% and 90% of the iterations when compared to salmeterol and tiotropium respectively produced dominant results for indacaterol.

Conclusion: The CE analyses demonstrate that indacaterol dominates both tiotropium and salmeterol and is likely to remain cost-effective under a range of assumptions.

P1293

The drug costs associated with COPD prescription medicine in Denmark

Peter Lange¹, Marie Jakobsen², Niels Anker², Jens Dollerup³, Peter Bo Poulsen³. ¹Department of Public Health, Section of Social Medicine, University of Copenhagen, Denmark; ²Department of Labour and Health, COWI AS, Lyngby, Denmark; ³Medical & Access, Pfizer Denmark, Ballerup, Denmark

Background: Spirometric studies of the general population estimate that 430,000 Danes have chronic obstructive lung disease (COPD). COPD is mainly caused by smoking with smoking cessation being considered the most important intervention to prevent disease progression. Cost-of-illness of COPD in Denmark is significant. However, the use of prescription medicine for COPD has not been analysed for the Danish population.

Aim and objective: Analyse the societal costs associated with prescription medicine for the treatment of COPD in Denmark.

Methods: The study was designed as a nation-wide retrospective register study of the drug costs (ATC group R03) associated with COPD from 2001-2010. Data were retrieved from the Prescription Database and the National Patient Register. The population comprised individuals (40+ years) having had at least one prescription of medications (R03) with an indication code indicating COPD. Patients dying were included up to time of death. A societal perspective included both public reimbursement costs and co-payment. Costs were calculated in fixed 2010-prices using a Laypyres price index (average treatment cost per DDD and DDD amount sold).

Results: In the period 2001-2010, 292,646 individuals (40+ years) have had at least one prescription of R03 medication. Among these, 124,020 with a COPD diagnosis had been hospitalized, whereas 46,218 have not. The annual average drug cost (R03) was DKK 8,017 per patient (Euro 1,069) with a total average cost per year of 680 million DKK (91 million Euros).

Conclusions: The annual costs of prescription medicine for COPD in Denmark are significant. For comparison smoking cessation treatment costs, i.e. the primary intervention towards COPD, are much lower.

P1294

Varenicline is a cost-effective pharmacotherapy in smoking cessation of nicotine dependent patients with mild to moderate COPD

Heikki Ekroos¹, Jarmo Hahl², Kaisa Tuppurainen³, Kari Linden³, Miika Linna⁴, Harri Sintonen⁵. ¹Porvoo Hospital, Hospital District of Helsinki and Uusimaa, Porvoo, Finland; ²Market Access and Health Outcomes, AT Medical Affairs Consulting (Medaffcon) Oy, Espoo, Finland; ³Medical Department, Pfizer Oy, Helsinki, Finland; ⁴HEMA institute/Department of Industrial Engineering and Management, Aalto University and National Institute for Health and Welfare, Helsinki, Finland; ⁵Hjelt Institute/Department of Public Health, University of Helsinki, Finland

Background: Smoking causes significant burden to health care systems and societies and is the most common cause of COPD, one of the leading causes of death globally. Smoking accelerates progression of the disease, yet many people continue to smoke after COPD diagnosis.

Objective: To study the cost-effectiveness (CE) of varenicline combined with physician advice as a smoking cessation compared to physician advice alone in smokers with mild to moderate COPD from a Finnish health care payer perspective.

Methods: A Markov cohort health state transition structure was used to model the lifetime transitions of a smoker cohort through COPD stages I-IV, lung cancer and death. Data from pivotal safety and efficacy study of varenicline for smoking cessation were used with Finnish morbidity, mortality, smoking and health care resource consumption registry data and results from local quality of life studies.

Results: In the base case analysis incremental CE ratio (ICER) of varenicline is €11000/Quality Adjusted Life Year (QALY) gained or €10000/Life Year gained in lifetime analysis. A frequently referred ICER threshold of €40000/QALY gained is achieved before 11 years. Both univariate and probabilistic sensitivity analysis (PSA) confirm the robustness of these results; in PSA the probability of varenicline being cost-effective is 100% at a willingness to pay (WTP) level of €40000/QALY gained in lifetime horizon, and exceeds 50% at WTP level of €44000/QALY in 10 years.

Conclusions: The study suggests that varenicline combined with physician advice is cost-effective compared to physician advice alone in smoking cessation of Finnish patients with mild to moderate COPD.

P1295

The potential cost-effectiveness of glycopyrronium bromide, a novel LAMA

Michael Baldwin, Per-Olof Thuresson, Yumi Asukai. HEOR, Novartis Pharmaceuticals UK Limited, Horsham, United Kingdom HEOR, IMS Health, Basel, Switzerland HEOR, IMS Health, London, United Kingdom

Introduction: Glycopyrronium bromide (NVA237) is a once-daily long-acting muscarinic antagonist (LAMA). It will provide a potential alternative therapy option for the maintenance treatment of moderate-to-severe COPD.

Objectives: The aim of the study was to assess the cost-effectiveness of glycopyrronium in the Swedish market, given different pricing scenarios.

Methods: An economic evaluation was conducted based on the use of a Markov model to evaluate the cost-effectiveness of glycopyrronium with varying thresholds of cost-effectiveness. The main clinical inputs were the improvement in lung function and the rate ratio of exacerbation. These were obtained from the phase III clinical trial data comparing glycopyrronium with tiotropium and placebo. Drug acquisition costs in Sweden for the comparators were obtained from the Swedish Formulary (FASS). Costs of maintenance therapy and exacerbation treatment were obtained from published Swedish studies.

Results: When evaluated over a three year time horizon, glycopyrronium is cost-effective (at 500,000 SEK (USD 75,188) per QALY) compared to tiotropium, up to a public price of SEK18.15 (USD2.73) using a payer perspective and SEK18.49 (USD2.78) using a societal perspective.

Conclusion: Results of the economic analysis show that once-daily glycopyrronium is a cost-effective treatment alternative to tiotropium under a number of different pricing assumptions.

P1296

Resource utilization and economic impact of switching uncontrolled asthma and exacerbating COPD patients on monotherapy to fixed dose combination treatment in Germany

Kirsten Westerhout¹, Maarten Treur¹, Benno Bechtel². ¹Health economics and outcomes Research, Pharmerit International, Rotterdam, Zuid-Holland, Netherlands; ²New Product Introduction & Health Outcomes, GlaxoSmithKline GmbH & Co. KG, Munich, Germany

Objective: To estimate resource utilization and economic impact of switching uncontrolled asthma and exacerbating COPD patients on monotherapy to inhaled corticosteroid (ICS) plus long acting beta-antagonists (LABA) in a fixed dose combination (FDC).

Methods: A literature based economic model was developed using the perspective of the German statutory health insurance. Uncontrolled asthma patients on ICS monotherapy were switched to FDC treatment, increasing the probability of their asthma being controlled. COPD patients on LABA monotherapy having one or more severe exacerbations requiring hospitalization per year were switched to FDC, decreasing the risk of exacerbation. Hospitalization costs were based on the German diagnosis related group system. Average annual LABA, ICS and FDC cost were based on IMS prescription data and the Lauer-Taxe. Control status, resource use and total costs were estimated before and after switching.

Results: Treatment switching of uncontrolled patients to FDC was associated with a 10% increase in asthma patients rated well-controlled, leading to a 15% reduction in annual hospitalizations. For COPD, the number of annual exacerbations and corresponding hospital admissions was reduced by 13%, when patients with at least one severe exacerbation were switched to combination therapy. Additional FDC acquisition costs were fully off-set by lower hospitalization expenditures in both diseases.

Conclusion: Switching uncontrolled asthma and exacerbating COPD patients on monotherapy to FDC in Germany was estimated to result in improved disease control, fewer hospitalizations and a cost neutral impact.

P1297

Annual direct-cost of asthma and COPD in Turkey

Sadik Ardic¹, Erdogan Cetinkaya², Pinar Cirkin¹, Ozlem Salman Sever¹, Hilal Onaran². ¹Clinic of Chest Diseases, Diskapi Yildirim Beyazit Training and Research Hospital, Ankara, Turkey; ²Clinic of Chest Diseases, Yedikule Chest Diseases and Thoracic Surgery Training and Research Hospital, Istanbul, Turkey

Introduction: Asthma and COPD are considered among the top 10 leading chronic conditions with increasing prevalence that translates into increased direct and indirect medical expenditures (1).

Aims and objectives: The ONDINE study aimed to calculate annual direct medical cost of asthma and COPD in Turkey

Methods: Patients with asthma or COPD were included in this national, multi-center, cross-sectional, non-interventional study. Direct costs including treatment, tests and healthcare resources utilization were calculated.

Results: A total of 596 patients with asthma (n=301) or COPD (n=295) were included in the study. Disease control was evident in 38% of COPD and in 51% of asthma patients. COPD was severe in 31% of the patients while asthma was intermittent in 51%. Main drugs administered were long-acting beta-agonist (LABA) and inhaled corticosteroid (ICS) in asthma (68%) and in COPD (71%) patients. The most commonly performed tests in asthma and COPD patients were chest XR (98% and 99%) and spirometry (98% and 98%). Average annual direct cost (including drug, non-drug application, hospital and personnel costs) was 8386

SUNDAY, SEPTEMBER 2ND 2012

TL (3595 Euro) for asthma and 10798 TL (4629 Euro) for COPD. LABA+ICS combination (1132 TL, 485 Euro) was the highest drug-related cost. Poor control and increased severity of both asthma and COPD caused higher hospital cost and higher total direct cost (for all $P < 0.001$).

Conclusions: The study revealed that based on the significant relation to direct costs, strategies to enable better disease control and to reduce severity of the disease in asthma and COPD must be considered in healthcare policies to limit economic burden.

Reference:

- [1] Shaya FT et al. Burden of concomitant asthma and COPD in a Medicaid population. *Chest*. 2008;134(1):14-9.

P1298

Cost-effectiveness of early assisted discharge for COPD exacerbations in the Netherlands

Lucas Goossens¹, Cecile Utens², Frank Smeenk³, Onno van Schayck², Maureen Rutten-van Mölken¹. ¹Institute for Medical Technology Assessment, Erasmus University, Rotterdam, Netherlands; ²CAPHRI, Maastricht University, Maastricht, Netherlands; ³Pulmonary Disease, Catharina Hospital, Eindhoven, Netherlands

Background: Hospital admissions for exacerbations of chronic obstructive pulmonary disease (COPD) are the main cost drivers of the disease. An alternative is treating suitable patients at home. This study reports on the cost-effectiveness of the GO AHEAD trial in the Netherlands.

Methods: Patients (n=139) were randomized to seven days of inpatient hospital treatment (HOSP), or to three inpatient hospital days and home treatment by community nurses for four days (EAD). Nursing and physician activities were analyzed in detail in order to estimate costs for inpatient days. Healthcare resource use, absenteeism, and informal care were recorded in cost diaries. Calculations were performed from a healthcare perspective and a societal perspective, including costs outside healthcare.

Results: Seven days after admission, mean change from baseline Clinical COPD Questionnaire (CCQ) score was better for HOSP, but not statistically significantly: 0.29 (95% CI: -0.04; 0.61). The difference in the probability of having a clinically relevant improvement was significant, in favor of HOSP: 19.0%-point (CI: 0.5%; 36.3%). EAD saved costs. The difference was significant from a healthcare perspective: -€244 (CI: -315; -168). Societal: -€65 (CI: -152; 25).

After three months follow-up, differences in effectiveness had disappeared. The difference in quality-adjusted life years (QALYs) was 0.0054 (CI: -0.021; 0.0095). EAD saved costs from a healthcare perspective, but not significantly: -€168 (CI: -1253; 922). From a societal perspective, total costs increased, due to higher informal care costs: €908 (CI: -553; 2296).

Conclusions: No clear evidence was found to conclude that either treatment was more effective or less costly.

P1299

Inpatient hospital care or hospital-at-home for COPD exacerbations: A discrete choice experiment

Lucas Goossens¹, Cecile Utens², Frank Smeenk³, Bas Donkers⁴, Onno van Schayck², Maureen Rutten-van Mölken¹. ¹Institute for Medical Technology Assessment, Erasmus University, Rotterdam, Netherlands; ²CAPHRI, Maastricht University, Maastricht, Netherlands; ³Pulmonary Disease, Catharina Hospital, Eindhoven, Netherlands; ⁴Erasmus School of Economics, Erasmus University, Rotterdam, Netherlands

Objective: Quantifying patient preferences for different aspects of hospital-at-home in the Netherlands for patients with a COPD exacerbation.

Methods: In a discrete-choice experiment, respondents were asked to make multiple choices between hospital treatment as usual (7 days) and two combinations of hospital admission (3 days) followed by treatment at home. The latter was described by attributes: training of homecare nurses (general/pulmonary), number of different nurses involved, number of daily visits, co-payments, readmission risk, contact in case of worsening disease (GP/hospital), and informal caregiver burden. Hospital treatment was constant. Respondents were COPD patients in an RCT investigating the cost-effectiveness of early assisted discharge, and their informal caregivers. The data for each group were analyzed in latent-class conditional logit regression.

Results: 202 questionnaires were returned. 25% of patients and caregivers opted for hospital treatment regardless of the description of the hospital-at-home pro-

gram, 46% never chose the hospital. The best models contained four latent classes, defined by different preferences for the hospital and for the caregiver burden. Preferences for other attributes were shared by all classes. Except for the number of visits, all attributes had a significant effect on choices in the expected direction.

Conclusion: Considerable proportions of patients and caregivers have a preference for either admission or hospital-at-home, irrespective of the characteristics of the hospital-at-home program. Financial burden and informal caregiver burden weighed most on the choice between hospital-at-home options. The number of daily visits did not play a role.

P1300

Health care claims analysis to quantify the burden of moderate-to-severe asthma

James Zazzali¹, Eunice Chang², Michael Broder². ¹Medical Affairs, Genentech, Inc, South San Francisco, CA, United States; ²Health Economics and Outcomes Research, Partnership for Health Analytic Research, LLC, Beverly Hills, CA, United States

Objectives: To describe the economic burden and health services use among moderate to severe asthma patients.

Methods: Retrospective cross-sectional cohort analysis using health insurance claims. Study period was 01/07/2006 through 30/06/2007. It included patients age ≥ 12 who had an asthma diagnosis and used medium to high dose ICS/LABA with or without oral steroids and/or omalizumab (US National Heart Lung and Blood Institute [NHLBI] Steps 4-6) and who did not have chronic obstructive pulmonary disease (COPD).

Results:

Conclusions: The economic burden of health care on patients with moderate-to-severe asthma is quite high and increases with disease severity. Although health care utilization by asthma patients has decreased in recent years, patients with severe asthma still spend significantly more time and money on health care than those who have more manageable symptoms. Medications that better target both asthma symptoms and the underlying disease process should reduce these costs.

P1301

Managing COPD as a long term condition: Reducing variation and improving quality of care

Catherine Blackaby, Phil Duncan, Alex Porter. Lung Programme, NHS Improvement, Leicester, United Kingdom

Introduction: COPD costs the UK healthcare system an estimated €1112m pa with national data indicating significant unwarranted variation in quality of care, recorded prevalence and hospital admission. Experience across a national improvement programme has identified four stages of any long-term condition where focused effort can improve care and outcomes: finding out, living with the condition, when things go wrong and towards the end of life.

Aim: To identify what information and approaches can help primary care teams in England use capacity differently to improve care and outcomes for patients living with COPD.

Method: Two practices, two clinical commissioning groups and one specialist respiratory team tested approaches to improve delivery of long term care for COPD patients. Analysis of the patient pathway and current use of primary and secondary care resources identified priority areas. Clinical teams then tested how information, consultations and organisation of work could be adapted to improve healthcare resource use and patient-reported outcomes.

Results: Understanding current resource use and comparative performance demonstrated potential for more proactive use of capacity in areas such as education, self care and medicines management. The first two sites who spent increased time proactively with patients reported improvement in self management of exacerbations and medicines management.

Conclusion: Focusing effort on a small number of sites, regularly using comparative data and providing practical support can facilitate change and demonstrate how capacity may be used differently to improve quality of care for people living with COPD.

Abstract P1300 – Table 1

	Medium Dose ICS/LABA N=25,614, 78%	High Dose ICS/LABA N=6,998	ICS/LABA + Oral Steroids N=241	Total N=32,853	P
Annual Healthcare Charges (USD), mean (SD)					
Total charges	15,403 (31,509)	19,499 (32,597)	42,855 (68,793)	16,477 (32,294)	<0.001 ^a
Rx charges	3,747 (4,478)	5,670 (6,467)	10,900 (9,900)	4,209 (5,119)	<0.001 ^a
Non-Rx charges	11,657 (30,119)	13,829 (30,685)	31,955 (65,174)	12,268 (30,700)	<0.001 ^a
Annual Asthma-related Utilization					
Office visits, mean (SD)	1.4 (2.6)	2.3 (4.3)	4.4 (6.4)	1.6 (3.1)	<0.001 ^a
≥ 1 hospitalization, no. (%)	427 (1.7)	222 (3.2)	40 (16.6)	689 (2.1)	<0.001 ^b

^aF-test to compare across three groups; ^bChi-square to compare across three groups.

SUNDAY, SEPTEMBER 2ND 2012

P1302**Improving adult asthma care in England: Emerging learning from a programme of national improvement projects**

Hannah Wall, Phil Duncan, Alex Porter. *Lung, NHS Improvement, Leicester, Leicestershire, United Kingdom*

Introduction: Asthma is a long-term respiratory condition affecting up to 5.9% of the England population. There have been between 1000 and 1200 deaths a year since 2000 with almost 40% of these under 75 years old. Asthma is responsible for large numbers of emergency attendances to Emergency Departments and emergency admissions.

Aims: To use service improvement approaches to define the patient pathway in order to improve the patients experience and outcomes of care – and reduce overall variation.

Method: Seven improvement projects from primary and secondary care used improvement methodologies to analyse the existing patient pathway, implement service redesign and assess the impact for patients with asthma in relation to: diagnosis and medicines optimisation, chronic disease management and acute care. Primary care data was used to identify cohorts of patients eligible for diagnosis and review and secondary data was used to demonstrate areas of duplication and gaps in service provision.

Results: Implementation of principles such as: primary care register reviews, self-management support, medicines optimisation, standardised care in acute settings and primary care follow-up on discharge have demonstrated cost savings and increased productivity in a number of improvement projects. Project data on reduction in admissions and Emergency Department attendances demonstrates improved outcomes. Patient feedback highlights a positive experience of redesigned services.

Conclusion: There is variation in the delivery and quality of asthma services in England. Systematic improvement approaches reduces variation and increase productivity as well as delivering a positive experience of care.

P1303**Efficacy and safety of applying the British Thoracic Society (BTS) criteria to determine appropriateness of follow up in general respiratory clinics**

Satinder Dalay, Vikas Punamiya, Shiva Bikmalla, Alice M. Turner, Rahul Mukherjee, *Department of Respiratory Medicine & Physiology, Heart of England NHS Foundation Trust, Birmingham, United Kingdom*

Introduction: Respiratory physicians are under increasing pressure in England to discharge patients with chronic illnesses to primary care. The BTS statement on criteria for specialist referral, admission, discharge and follow-up for adults with respiratory disease (Thorax 2008; 63(Suppl 1):i1-i16.) remains the only available basis for this dialogue.

Aim: To assess the impact of implementing BTS criteria for discharge on follow-up to new ratio ("new-to-follow up" ratio) in a general respiratory clinic (efficacy) and to assess readmission rates of those discharged as a measure of appropriateness of discharge.

Methods: Retrospective analysis of "New-to-Follow up" ratios of one pilot general respiratory clinic in a large teaching hospital collected over a 2 week period in July 2010; repeat analysis undertaken (Oct-Dec 2010) after a BTS statement-guided clinic reform was implemented (Jul-Dec 2010) with a management plan in the clinic letter. Unscheduled hospital admission in 6 months following the date of the clinic discharge were compared with preceding 6 months.

Results: Number of Follow-up-to-new ratio pre-reform was 5.0 (144/29); post-reform improved to 0.86 (111/129); clinic waiting time fell from 13 to 5 weeks. There was a significant drop in all-cause and respiratory-related admission rates for those who were reviewed and discharged.

Re-admission data

Admissions	Pre-Reform	Post-reform
Total	83	55
Respiratory	57	25
% of total	67	45

Conclusion: Patient-focussed, multidisciplinary approach to long-term respiratory conditions allows accurate diagnosis and appropriate discharge planning to take place using the BTS criteria.

P1304**Economic analysis of costs associated with a respiratory intensive care unit (RICU) in a tertiary care teaching hospital in northern India**

Kumari Shweta¹, Sachin Kumar², Anil Kumar Gupta³, Surinder Kumar Jindal⁴, Ashok Kumar³. ¹Hospital Administration, All India Institute of Medical Sciences, New Delhi, Delhi, India; ²Pulmonary Medicine, Institute of Liver & Biliary Sciences, New Delhi, Delhi, India; ³Hospital Administration, Post Graduate Institute of Medical Education & Research, Chandigarh, India; ⁴Pulmonary Medicine, Post Graduate Institute of Medical Education & Research, Chandigarh, India

Background: There is paucity of cost analytical studies from resource constrained developing countries defining the costs of intensive care.

Objective: Economic analysis of costs associated with RICU.

Methods: Prospective cost analysis study conducted in 74 patients admitted in the RICU from Dec 2008 to Feb2009. Costs segregated into fixed and variable cost. Correlation of these costs to the length of stay, mechanical ventilation and therapeutic intervention scoring system-28 (TISS-28) also done.

Results: The total cost per day was U.S. \$ 222.

Cost of RICU care (per patient per day)

Total cost	INR 10364 (U.S. \$222)
Total fixed cost	INR 4878 (U.S. \$104.43)
Total variable cost	INR 5,486 (U.S. \$117.44)
Total Drug cost	INR 3,824 (U.S. \$81.87)
Total cost for non ventilated patient	INR 6,585 (U.S. \$140.98)
Total cost for ventilated patient	INR 12,429 (U.S. \$266.09)

53.6% of the total cost was borne by the patients. The mean daily drug cost represented 69.8% of the variable and personnel salary constituted 86% of fixed cost. The TISS -28 score per nurse was significantly higher in non-survivors (69.2) than in survivors (30.6) and strongly correlated with the total cost. ($r = 0.91$)

Conclusions: Great disparity exists in economic terms in the intensive care in the western and developing world. Although, considerably less expensive, intensive care is expensive relative to the cost of living in India. The cost block methodology provides a framework for estimation of costs; is useful in future planning of resource allocation within the financial constraints and allows comparisons between ICUs internationally in an economical model of evidence based care.

P1305**Verbal abuse and other violence types against doctors in chest diseases polyclinic**

Sinem Berik, Fatih Alasan, Peri Arbak, *Chest Diseases, Duzce University Faculty of Medicine, Duzce, Turkey*

Aim: There are a few studies focused on unexpected patient-doctor relationship such as verbal abuse and the other types of violence.

Materials and methods: Two hundred thirty one patients (134 male, 97 female) who accepted filling out the forms and admitted to Chest Diseases Polyclinic between September and December 2011, were included in the study.

Results: The mean age of the patients was 53.6 ± 16.7 (15-85) years. The mean duration for anamnesis was 10.1 ± 4.2 minutes. Fourteen patients used verbal abuse or other types of violence (6.1%). Mostly, patients used violence by themselves (78.6%). Seven patients ridiculed (50%), two patients abused (14.3%), two patients threatened (14.3%) and three patients tried to enter free of turn (21.4%). Negative interaction mostly occurred in examination room (64.3%) and before the beginning of anamnesis (64.3%). The mean duration from the anamnesis to the final diagnosis was 41.7 ± 75.2 minutes (min:0-max:180). The mean admittance rates of verbal abusers to university hospital (27.9 ± 24.6 , Median=25) were significantly higher than the others (8.7 ± 12.7 , $p=0.007$, Median=5). The mean number of households of verbal abusers (2.8 ± 2.0 , Median=2) was significantly lower than the others (3.8 ± 1.7 , $p=0.041$, Median=4).

Conclusion: Verbal abuse is the most seen form of the negative relationships between patient and doctor. Making realistic changes in referral system can satisfy the expectations of patients. The positive relationship rights are necessary not only for patients but also for doctors.