RESULTS: Of 290 abstracts screened, 65 met selection criteria and were reviewed in detail. The average direct medical costs associated with chemotherapy-induced AEs ranged from $8,400–$13,500 for neutropenia hospitalization, $5,300–$7,500 per thrombocytopenia episode, and $14,500–$114,000 annually for anemia. Key cost drivers for each AE were: neutropenia—hospital length of stay, antibiotics, growth factors, and diagnostic tests; thrombocytopenia—platelet transfusions and major bleeding episodes; anemia—EPO-type drugs and transfusions. Neutropenia and anemia events in patients with hematologic malignancies resulted in direct medical costs more than double compared to solid tumors. Indirect costs were >50% of the direct costs. CONCLUSIONS: Hematologic AEs from cancer treatments result in substantial economic burden for payers, patients, and society. This burden appears particularly heavy for the hematologic malignancies where chemotherapy-induced hematologic AEs represent >20% of the overall cost of treatment. Targeted therapies for hematologic malignancy offer superior outcomes to chemotherapy with reduced AEs. However, the hematologic toxicities of these targeted agents vary and may affect the total cost of treatment or the underlying disease. Therefore, in addition to treatment outcomes, AEs and the cost of treating AEs should be taken into consideration when determining the optimal treatment for patients.

ECONOMIC ANALYSIS OF SURGICAL INTERVENTIONS IN ROMANIAN HAEMOPHILIACS

Mihai\v{}ov M\v{}D, Serban M\v{2}, Badeti R\v{2}, Popescu B\v{2}, Tepeneu P\v{1}, Schramm W\v{6}

1University Of Medicine and Pharmacy ‘Victor Babes’, Timisoara, Romania, 2Children Hospital, Timisoara, Romania, 3Children Hospital, Timisoara, Romania, 4University of Medicine and Pharmacy ‘Victor Babes’ Timisoara, Romania, 5Ludwig-Maximilians University Munich, GA, Germany

In Romanian haemophiliacs, because of limited access to clotting factor concentrates, surgical interventions are made especially in case of severe, life-threatening complications.

OBJECTIVE: To realize an economic analysis of orthopedic and surgical interventions. METHODS: In a seven-year period, 37 haemophiliacs (from 224 haemophilia patients registered and treated in Haemophilia Centre Timisoara) underwent 54 surgical and orthopedic interventions. We evaluated: direct medical costs (therapy and hospitalization costs) of these interventions, direct non-medical costs (home-hospital travel costs), indirect costs (morbidity costs; loss of income of family members who forfeit paid employment for haemophiliac home care; average number of days off at school or work), treatment compliance. Data were obtained from patients’ medical charts and from questionnaires administered to patients. RESULTS: Therapy costs represented 91.14% of direct medical costs (85.8% in haemophilia A without high-titer inhibitors, 95.34% in haemophilia A with high-titer inhibitors and 92.52% in haemophilia B patients). Direct non-medical costs represented 8.86% of total costs.

SOCIETAL COSTS OF ALLOGENEIC BLOOD TRANSFUSION IN THE NETHERLANDS

Van Hulst M\v{1}, Klok RM\v{2}, Eschbach ME\v{3}, Postma MJ\v{4}

1Groningen University Institute for Drug Exploration/Martini Hospital, Groningen, The Netherlands, 2University of Groningen, Groningen, The Netherlands, 3University of Groningen / Groningen Institute for Drug Exploration, Groningen, The Netherlands, 4University of Groningen / Groningen University Institute for Drug Exploration (GUIDE), Groningen, The Netherlands

OBJECTIVES: For estimating the cost-effectiveness of interventions to avert blood-transfusions it is important to estimate the costs of one unit of allogeneic blood. An example of such an intervention is administration of erythropoietin. Objective of this study was estimating the costs per unit of erythrocytes in The Netherlands from a societal perspective. METHODS: For the estimation of the costs we followed the path from donor to patient. In this path 6 steps were elaborated: donation, production, transport, storage and preparation, administration and the consequences of administration. In these different steps the cost-consequences were estimated. RESULTS: Although not all cost-factors could yet be identified, the cost-estimate is €240, for a unit of erythrocytes. The indirect costs are responsible for approximately 3% of the unit costs. The production and transport part by the Dutch blood banks is responsible for the majority of the costs. CONCLUSIONS: Internationally cost-estimates vary widely. Cost-estimates for the United States, UK, Sweden and Canada vary from approximately €130 to €930. For The Netherlands we estimated the unit costs for a unit of erythrocytes at €240 from a societal perspective.

DIRECT COST OF BETA THALASSEMIA MAJOR: RESULTS FROM THE ITHACA STUDY

Mantovani LG\v{1}, Ravera S\v{2}, Scalone L\v{2}, Cappellini M\v{4}

1University of Naples, Federico II, Naples, Naples, Italy, 2Center of Pharmacoeconomics, University of Milan, Milan, Italy, 3University of Milan, Milan, Italy, 4Department of Haematology, IRCSS Foundation Policlinico, Mangiagalli, Regina Elena Hospitals and University of Milan, Milan, Italy

OBJECTIVE: Patients with β-Thalassemia Major (TM) require life-long blood transfusions and, to avoid iron overload, Iron Chelation Treatment (ICT), based on 8–12 hour infusions of Deferoxamine (DFO) for 3–7 days/week, and/or Deferiprone (L1) orally administered. ICT regimen often causes low satisfaction and low compliance, with potentially negative consequences on patients’ health, wellbeing and costs. Aims: to investigate direct costs of treatment in TM patients. Costs were estimated from the societal perspective, using tariffs or prices applied in 2006. METHODS: The Italian-THALassemia-Cost-&-Outcomes-Assessment (ITHACA) was a naturalistic multicentre study conducted to evaluate costs, quality of life, compliance and treatment satisfaction in TM patients undergoing ICT. Patients of any age, on ICT for at least 3 years, were sequentially enrolled at 8 Italian Thalassemia Care Centers. Data on direct costs are referred to a retrospective median observational period of 11.7
months. RESULTS: 137 patients were enrolled (median age = 28.3 years, from 2.7 to 48.5 years, 49.6% male). At enrolment 112 (81.7%) patients had at least one thalassemia related complication (42.3% had hepatic, 58.4% endocrine, 18.2% cardiac diseases, 55.5% viral infections). Patients treated with DFO were 51.5%, 31.6% were treated with L1, 16.9% with DFO + L1. Treatment in patients taking DFO cost on average €552.88/patient/month plus €211.20 for pump and consumables; patients taking L1 cost €383.25/patient/month, patients taking DFO + L1 cost €918.41. Overall, mean direct cost was €1245.33/patient/month, with ICT representing 55.4% of costs, followed by transfusions (33.1%), hospitalizations and surgery (3.3%), laboratory and instrumental tests and medical visits (3.1%), concomitant medications (1.6%), non-medical costs (transportation, 3.4%). CONCLUSION: Transfusion and ICT account for 90% of total costs, corresponding to approximately €1000/patient/month. These results can be considered conservative because some sources of costs (e.g. nursing, home care) were not estimated, anyway we do not expect the amount of not included costs would significantly affect our results.

PHM9
THE EVALUATION OF ECONOMIES OF SCOPE IN GENETIC SCREENING BY DNA TECHNOLOGY: A MODELING STUDY
Rogowski W
GSF—National Research Center for Environment and Health, Neuherberg, Bavaria, Germany
OBJECTIVE: To assess by a modeling example under which conditions a combination of adult population genetic screening programs is cost-effective. METHODS: Based on a systematic literature review, hereditary haemochromatosis (HFE) was selected as a potentially cost-effective primary DNA screening target. A secondary condition where population screening exhibits favourable effectiveness yet unfavourable cost-effectiveness is hereditary nonpolyposis colorectal cancer (HNPPC). A decision tree for DNA screening for selected mutations in adult male Caucasians was constructed from a health care sector perspective for HFE, HNPPC, both combined and all three alternatives including first-degree relatives. Cost data from a recent HFE screening cost study in Germany were applied; HNPPC mutation prevalences were estimated based on data from the German HNPPC consortium. RESULTS: The model renders a cost-effectiveness ratio of approximately 100.000 Euro per life-year gained for the dominated HNPPC screening option, 300 EUR/LYG for HFE screening and 600 EUR/LYG for combined screening. Cost-effectiveness is most sensitive to different values for HFE penetrance and cost of genetic counselling found in the literature. Despite high incremental cost-effectiveness ratios for single HNPPC mutations added, the average cost-effectiveness ratio of the DNA test remains moderate if high test specificity is assured. Effectiveness and cost-effectiveness improve substantially if first-degree relatives are included. CONCLUSIONS: Rather than disease predisposition screening for frequent single nucleotide polymorphisms (SNPs) with low penetrance, it appears worthwhile to screen for rare mutations with high penetrance, combined with screening for HFE. Product developers in the in-vitro diagnostics industry may follow this approach to design cost-effective screening tools like DNA chips. The screening algorithm should be designed in a way to minimize the number of false-positives. Pre-test counselling should identify cases of familial cancer and ensure that negative test results are not misinterpreted as private mutations cannot be identified by a test for known HNPPC mutations.

PHM8
INDIRECT COSTS OF BETA THALASSEMAIA MAJOR: RESULTS FROM THE ITACA STUDY
Krol M1, Ravera S2, Uyl-de Groot C3, Cappellini M4, Scalone L5, Mantovani LG1
1The institute for Medical Technology Assessment, Rotterdam, The Netherlands, 2Center of Pharmacoeconomics, University of Milan, Milan, Italy, 3IMTA, Rotterdam, The Netherlands, 4Congenital Anemia Center, IRCSS Foundation Policlinico, Mangiagalli, Regina Elena Hospitals and University of Milan, Milan, Italy, 5University of Naples, Federico II, Naples, Italy
People with hematological disorders such as beta thalassemaia major (TM) who regularly receive blood transfusions need iron chelation therapy (ICT) to prevent iron overload. The drugs most frequently given are deferoxamine and deferiprone. So far, little is known about the costs related to iron chelation treatment. OBJECTIVE: To receive information about indirect costs due to ICT. METHODS: The Italian-THAlassemia-Cost-&-Outcomes-Assessment (ITHACA) is a naturalistic, multicenter, retrospective study involving patients with TM of any age, on ICT for at least 3 years, sequentially enrolled at 8 Italian Thalassemia Care Centers. Indirect costs were estimated with modified versions of the “Health and Labour Questionnaire” (HLQ). RESULTS: A total of 116 Italian TM patients completed the HLQ. Sixty-one patients (52.7%) were in paid employment. 21 (34.4%) had experienced absenteeism from work due to ill health in the previous 2 weeks. The average absenteeism among patients in paid employment was 0.7 days/week. Indirect costs related to absenteeism are 27.55 euros per patient a week (based on net earnings). Fifteen patients (26.4%) of patients in paid employment) were hindered by health problems at work. Indirect costs per patient based on hours needed to catch up on tasks neglected due to health problems were 9.5 euros/week. Patients in our study received 1.24 hours of household help/week, adding up to €1245.33/patient/month, with ICT representing 55.4% of costs, followed by transfusions (33.1%), hospitalizations and surgery (3.3%), laboratory and instrumental tests and medical visits (3.1%), concomitant medications (1.6%), non-medical costs (transportation, 3.4%). CONCLUSION: Transfusion and ICT account for 90% of total costs, corresponding to approximately €1000/patient/month. These results can be considered conservative because some sources of costs (e.g. nursing, home care) were not estimated, anyway we do not expect the amount of not included costs would significantly affect our results.

PHM10
QUALITY OF LIFE IN PATIENTS WITH BETA THALASSEMAIA MAJOR: RESULTS FROM THE ITACA STUDY
Mantovani LG1, Ravera S2, Scalone L3, Cappellini M4
1University of Naples, Federico II, Naples, Italy, 2Center of Pharmacoeconomics, University of Milan, Milan, Italy, Italy, 3University of Milan, Milan, Italy, 4Congenital Anemia Center, IRCSS Foundation Policlinico, Mangiagalli, Regina Elena Hospitals and University of Milan, Milan, Italy
OBJECTIVES: Patients with β-Thalassemia Major (MT) require life-long blood transfusions, which often cause iron overload that may increase patients’ morbidity and mortality. Iron Chelation Treatment (ICT), based on 5–12 hour infusions of Deferoxamine for 5–7 days/week, and/or Deferoxamine orally, administered, is aimed to reduce iron overload but can be related to low satisfaction, low compliance and potentially negative consequences on clinical effectiveness and patients’ wellbeing. Aims: to investigate on Health-Related Quality-of-Life (HRQoL) of MT patients under ICT. METHODS: The Italian-THAlassemia-Cosy-Sc-Outcomes-Assessment (ITHACA) was a naturalistic multicentre study conducted to evaluate costs, HRQoL, compliance and treatment satisfaction in MT patients undergoing ICT.