PP67. Cost effectiveness analysis of two strategies of treatment for stage III non surgical non small cell lung cancer

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Background: At present, the best strategy in the treatment of stage III non surgical non small cell lung cancer is still controversial. New strategies associate simultaneous radiotherapy and chemotherapy. The GFPC has built a phase III protocol, which compare two arms. Arm A: three sequences of chemotherapy followed by radiotherapy; arm B: two simultaneous sequences of radio-chemotherapy followed by two chemotherapy treatments. We perform an economic evaluation in this randomized trial. This one will be realised from an insurance payer's perspective with only the measurement of direct costs. Direct costs include: the costs of administering the chemotherapy and radiotherapy schedules: costs of outpatients' medical and paramedical consumptions, costs of inpatients' hospital treatments (for chemotherapy and radiotherapy treatments and side effects), costs of transport. For hospital costs, the values for medical, paramedical and structure expenditures will be extracted from national scale of costs (Health Ministry). For examinations and pharmaceutical products, the volumes will be recorded in each center. The unit prices will be given by national standards. We set up an event tree for each possible outcome: early interruptions, adverse events (death or alive), chemo and radiotherapy strategies. The event tree will be used to weigh the measured costs.
Methods: Effectiveness will be measured by response rate and one year survival rate.
Results: The two strategies will be compared by incremental cost-effectiveness rate with a sensitivity analysis according to the variations of the costs and the survival rates.
The objective of this economic evaluation in an randomized trial is to help clinicians in the choice of the strategy.

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PP68. Cost identification of PAV versus ICE treatment in SCLC

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Background: Standard treatments for small cell lung carcinoma (SCLC) usually include Cisplatinum and Etoposide (=VP 16). The PAV regimen (platinum-adriamycin-VP 16) results in a complete response rate of 30% and a median survival of 12 months *(Joss et al. Ann Oncology 1995;6:157-166)*. The availability of hematopoietic support with peripheral blood progenitors and growth factors such as G-CSF led us to develop a program with multiple courses of high dose ICE (ifosfamide-carboplatinum-etoposide). The present preliminary study compares the cost of both regimens.
Methods: Four patients (pts) treated with PAV (1 limited and 3 extensive diseases) and 4 with ICE (2 limited and 2 extensive diseases) were included in the study. Median age was similar in both groups (PAV: 60 yr, range 48-70; ICE: 61 yr, range 41-63).
The hospital charts were used to determine the length of stay, and the accounting office computed both direct and indirect medical and ancillary costs of the treatment phases and of any readmission for febrile neutropenia during the treatment cycles and the first month of follow-up.
Results: Length of hospital stay was 36±5 days in the PAV group and 59±2 days in the ICE group.
Break down of costs by treatment phase was as follows:

Cost per phase (mean ± SEM)	PAV group (n=4)	ICE group (n=4)
Pre-treatment	0	641±0
Chemotherapy	34'883±5'601	85'138±3'438
Febrile neutropenia	9'341±7'645	31 '667±4'136
Outpatient visits (1 month)	5'498±748	3'353±752
Total cost (CHF)	**49'721±4'617**	**120'798±4'401**

Break down of costs by type of ressources consumption was also computed.

Discussion: ICE treatment for SCLC is 2.4 times more expensive than PAV treatment, due to a longer hospital stay and more febrile neutropenia. This preliminary study is based on too few patients to analyze patient survival and derive cost-effectiveness ratios. A recent multicenter phase II trial using the ICE regimen in 46 pts showed a median survival of 14 months: 18 months for limited disease and 10 months for extensive disease (Leyvraz et al. Proceedings ASCO 1997; 16:453a). This improvement in survival will be studied in a large multicenter phase III trial comparing the two regimens, before treatment recommendations can be established.

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PP69. Cost effectiveness of FDG-PET in the evaluation of solitary pulmonary nodules

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Background: Positron emission tomography (PET) using the glucose analogue F-18-Fluorodexyglucose (FDG) is a promising new method for the non-invasive differentiation of benign and malignant solitary pulmonary nodules (SPN): Aim of the study was to evaluate, how FDG-PET can be used cost-effectively in the management of patients with solitary pulmonary nodules (SPN).
Methods: Using decision tree analysis we compared five strategies regarding their efficiency for the correct diagnosis of a malignant pulmonary nodule, the resulting life-expectancy of patients and costs: (1) Immediate surgery for all patients (OP). (2) radiological follow-up for 2 years (RF); (3) combination of FDG-PET and RF (PETRF); (4) combination of CT and RF (CT-RF). (5) combination of CT, PET and RF (CT-PET-RF). Sensitivity and specificity of PET (90% and 85%) and CT (100 and 48%) were calculated from a prospective evaluation of 65 patients with SPN at our institution. Costs for each of these patients were determined individually on the basis of a standardized German fee schedule ("GOA"). In addition, costs were calculated on the basis of reimbursed values. Mortality of thoracotomy (0.04-6.5%), prevalence of malignant nodules (10-65%), yearly mortality rate of lung cancer (2.5-10% after immediate surgery and 60-68% if the diagnosis of lung cancer was missed) were taken from the literature. Life expectancy was calculated using the declining exponential approximation of life expectancy (DEALE).
Results: There were no differences between the strategies OP-PET-RF, CT-RF and CT-PET-RF regarding life expectancy (difference < 1 week). RF, however, resulted in an approximately 10 months decrease in life-expectancy for a 60-year-old-man. The number of operations for benign lesions is markedly lower using the strategies PET-RF and CT-PET-RF than for CT-RF (43 and 37 vs. 66%). All non-invasive strategies resulted in marked lower costs than OP. Only if the total costs of surgery for benign disease would be below 2500 US $ OP would be more cost effective. For a low prevalence of malignant tumors (< 50%) PET-RF and CT-PET-RF resulted in up to 1600 US $ lower costs per patient than CT-RF.
Conclusion: Combined use of FDG-PET and radiological follow-in the clinical workup of SPNs does not compromise patient survival compared to immediate surgery. This non-invasive strategy can lead to considerable cost savings especially in patient groups with low prevalence of lung cancer.

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