treatment of breast cancers with bad prognosis and of primitive treatment of acute leukaemia.
Discussion: There is a puzzling dilemma for hospitals in general and more especially for cancer institutes between profit-based and health output-based strategies. Public health interest only goes hand in hand with financial interest in implementing new techniques or methods when they cut treatment costs. When they are both life saving and cost improving they may be not adopted even if they are most cost-effective. The prospective payment-like system obviously offers very slight incentives to innovate, which may be detrimental to medical activities such as anticancer ones where medical progresses still remain to be done.

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OP22. Economic evaluation of Amifostine in the treatment of small cell lung cancer (SCLC)

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An economic evaluation is being conducted as part of a randomised multicentre study assessing the role of the cytoprotective agent, amifostine, in the treatment of small cell lung cancer. This study - the DART study (Does Amifostine Reduce Toxicity?) - was developed following a phase II pilot study to assess response rate in 30 previously untreated patients with favourable prognosis SCLC. Treatment was given with ICE (ifosfamide, carboplatin and etoposide) chemotherapy. A high objective response rate was reported (83% (95% CI (70%, 97%))), but myelotoxicity was severe. 86% of patients had WHO grade 3/4 neutropenia (95% CI (73%, 99%)) and 63% had WHO grade 3/4 thrombocytopenia (95% CI (46%, 81%)). One third of patients spent time in hospital for treatment-related complications. The length of stay is shown in the table:

Cycle number	No. of patients receiving cycle	No. of patients spending time in hospital	Median days in hospital	Range
1	30	7	9	1-16
2	29	4	10.5	2-13
3	27	6	2	1-11
4	25	6	2	1-11
5	24	8	2	1-10
6	17	2	2.5	23

It has been suggested that cytoprotection of the normal tissues might allow the preservation of tumour cytotoxic dose intensity with fewer and less severe side effects. If amifostine were found to be effective in reducing myelosuppression, there might be advantages in patient outcome and in resource costs relating to management of chemotherapy-related toxicities.

This study aims to investigate whether the administration of amifostine before each cycle of ICE chemotherapy will attenuate toxicity. Eighty-four previously untreated patients with favourable prognosis SCLC will be randomised to receive either amifostine followed by chemotherapy or chemotherapy alone, for a maximum of 6 cycles.

Resource use will be examined using data about hospital visits, investigational procedures undertaken, and treatments administered. In-patient admissions and length of hospital stays for all reasons, the number of out-patient visits and day patient admissions will be recorded. All medication with associated costs and details of any other procedures will be recorded. Patient outcome will be assessed using the EuroQoL questionnaire, completed immediately prior to each cycle of treatment and then at three monthly intervals for 18 months or until death.

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OP23. Elicitation of preferences and patients participation in the decision making process

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Background: The purpose of this study was to give patients the choice between two ways of adjuvant treatment for breast cancer: a *short* during 9 weeks chemotherapy and radiotherapy concomitant - and a long during 16 weeks chemotherapy followed by radiotherapy - with the intention to determine the explicative factors of this choice, to elicit patients' preferences and the need to choose for the patients.
Methods: As we faced an uncertainty decision problem the referenced economic model is the expected utility theory. We then have developed the questionnaire in order to elicit: patients' behaviour towards risk, present preference and risk perception. Patients enrolled were menopausal or non menopausal. Non menopausal patients had 1 to 3 involved axillary lymph nodes or none with at least 1 of the prognostic factors as SBRIII, HR-, PVTE+. The chemotherapy associated 4 cycles of 12mg/m² mitoxantrone and 600mg/m² cyclophosphamide, every 21 days. At the first consultation, the physician explained to patients what was the choice and gave them an information letter explaining the advantages and disadvantages of each way of treatment and some probabilistic information about side effects. Then (s)he filled out a questionnaire to let us know if patients were influenced by him(her). The day of the first cycle, patients gave their responses and filled out the first questionnaire which had to elicit the three main indicators above in accordance with the economic theory. They received a second one at the end of the treatment so as to know their choice *a posteriori*, the satisfaction to be able to choose the treatment and the degree of desire for participation in the therapeutic decision making process.
Results: At the present time, choice was proposed to 57 patients: 39 (67%) of them chose the *short*. 49 patients had already filled out the first questionnaire. The univariate analysis showed that 7 variables had a statistical significant explicative part for the choices fear of adverse effects, length of treatment, value of gains associated to the chosen treatment, trade off in number of weeks making patients changed their choice: fear of fatigue and fear of amassing adverse effects both linked to the *short* treatment, behaviour toward risk. Among the 34 patients (26 in the short) who had filled out the second questionnaire, only 2 (long) thought that they will "recommend" the other treatment. About satisfaction with the possibility to choose treatment, 88% answered "quite" and 76% said that it wasn't or it was a little difficult to make it. About the degree of participation, 73% wanted to take the decision.
Discussion: At first, because the choice being not statistically associated with patients' social demographics characteristics, we could say that patients' choice could be effectively considered as a trade off between side effects (the risk) and time. Secondly, results demonstrate how important it is to let patients having a more active participation in the decision making process and then to work about elicitation of preferences. Finally, the expected utility theory seems here to be adapted for modelize the decision making process in oncology.

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OP24. Costs and quality of life in metastatic breast cancer

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Background: With an annual incidence of 26,000 cases in France, breast cancer is the most common malignancy in French women, accounting

for almost 20% of all cancers in France in 1990, and more than a third of women still die from metastasic breast cancer. Although metastatic breast cancer is a major public health issue and is associated with high management costs, no pharmacoeconomic assessment has been carried out in patients with this disease.

Methods: A Markov process model was designed to assess the cost-utility of a new hemisynthetic Vinca-Alcaloid (Vinorelbine) and two taxoids (Docetaxel and Paclitaxel) for second-line therapy of metastatic breast cancer. The model took into account 53 disease states associated to responses, toxicities and disease complications. Phase II clinical trials were used to calculating transitional probabilities by the actuarial method and the density function approach.

The content of health state descriptions was based on the Health Utility Index (Mark II and Mark III, Mc Master University). Three dimensions: vision, hearing, speech, were considered as optimal and omitted. Five specific cancer complaints were added. The scenarii were validated for comprehension by 5 oncologists and 3 nurses. Health state preferences were estimated by using the standard gamble and the feeling thermometer techniques in a survey involving 20 oncology nurses as a proxy for patients. To sum up the results, a method similar to the Q-Twist approach has been used combining progression and adverse events into a therapeutic risk-benefit index. The health-related quality-of-life coefficients were used as quality adjustment factors to calculate quality-adjusted progression-free survival associated with the 3 regimens.

Cost evaluation was based on the combined perspectives of the Health Care System and of the patient. Non medical direct and indirect costs were excluded from the calculation. Consumption per episode of care was estimated by retrospective analysis of 153 medical files from 5 French hospitals. To identify hospital resource utilization, the French DRG's classification was used. Real costs per DRG were obtained from the Ministry of Health cost survey based on accounting data collected in 1993 from 22 hospitals. Ambulatory costs were estimated from the patients' prescriptions made at hospital discharge. Valuation of ambulatory resource utilization was based on the French relative value scale for medical services and retail prices for drugs. The model kept track of the treatment cost, of the adverse event-related cost, and of the savings due to postponed recurrences.

Cost and quality of life assessments under treatment from the beginning of the chemotherapy until death have been carried out following this methodology. Incremental cost utility ratios were calculated.

Results: For a typical base line, Vinorelbine and Paclitaxel treatments were strongly dominated by Docetaxel treatment. The latter reduced the time spent in progression, decreased the number of disease complications, and thereby, provided better quality of life. Even with the highest cost linked to treatment, as Docetaxel allowed to avoid numerous disease complications, its total cost was the smallest. Broad sensitivity analysis confirmed the robustness of these results.

Discussion: The model approach allows to synthesize results of different type of studies clinical trials, current practice surveys, resource utilization reviews and quality of life assessment. It enables to anticipate the whole consequences of the disease.

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OP25. A Systematic Review of Health Benefit Valuation in Economic Evaluations in Cancer

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Background: As the number of cancer treatments increases, their consequences for patients relate not simply to hard clinical outcomes such as survival. Interventions invariably differ in terms of their impact, often via side effects, on various dimensions of health-related quality of life (HRQL) (e.g. pain, physical function). They also differ in terms of their process characteristics (e.g. the need to visit hospital frequently versus largely community-based care). Increasingly, the comparison of cancer treatments is characterised by one treatment having a lower incidence of one sort of adverse event and a higher incidence of another. Trade-offs may also exist between the HRQL implications of adverse events, the process characteristics of treatments and hard clinical outcomes such as survival. In order for decision makers to judge the overall net benefits of interventions, valuation studies offer a means of eliciting - from patients or other groups - the weights attached to the various outcomes and process characteristics of treatments. Valuation studies can facilitate the estimation of a unidimensional measure of benefit which can then be used in resource allocation. Various approaches to the valuation of health exist, some of which have been used in the evaluation of cancer treatments. This paper presents the results of a systematic review of the empirical literature related to health valuation studies in the area of cancer care.

Methods: Relatively few systematic reviews of economic evaluations have been undertaken and problems exist with identifying relevant articles from bibliographic databases due to indexing which lacks specificity. A range of databases have been interrogated including Medline, the OHE HEED database and the NHS CRD NEED database. The aim of the search strategy has been to identify economic evaluations which have sought to combine the multidimensional outcomes and process characteristics of treatment onto a single scale using valuation techniques which attempt to reflect individuals' preferences. Analysis of these papers is currently underway and results will be presented.

Discussion: The review will help to illuminate the rationale for valuation studies in economic evaluation and the strengths and weaknesses of various methods such as QALYs, Q-TWIST, healthy-year equivalents, willingness to pay and conjoint analysis.

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OP26. Assessing the relative costs of standard open surgery and laparoscopic surgery in colorectal cancer in a randomised controlled trial

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Colorectal cancer is the second most common malignancy in the western world. Adequate surgical resection is the only curative treatment with overall survival rates of just under 50% at 5 years. It is well recognised that surgical technique is critical both in respect of cure and local recurrence. Conventional open surgery is regarded as the current "gold standard" for colorectal malignancy. However, following the recent wide-scale introduction of the laparoscopie procedure for abdominal procedures such as cholecystectomy and appendectomy, interest is now turning to the place of laparoscopic surgery in colorectal cancer. Enthusiasts around the world are beginning to explore the role of such technology with the hope that the perceived benefits of laparoscopic surgery in other arenas, namely less pain, earlier mobilisation, shorter hospital stay, earlier return to work and improved long-term cosmetic results, will also apply to laparoscopic colorectal surgery. Indeed, the UK Medical Research Council (MRC) is currently funding a multi-centre randomised controlled clinical trial (the MRC CLASICC Trial) to evaluate the role of laparoscopic surgery in the management of patients with colorectal cancer.

The primary end-points of this trial are pathological resection margins, 30-day operative mortality, and local recurrence rates, disease-free and overall survival at 3 years. Cost-effectiveness and quality of life are defined as secondary end-points; however they play an important role in the overall comparison of laparoscopic surgery with conventional open surgery. Several economic evaluations will be made including:

- the relative costs of laparoscopie and open procedures with respect to equipment cost, theatre time, hospital stay;
- the use of health resources, such as GP visits, use of social services, district nurse visits;
- quality-adjusted life years obtained using Q-TWIST analysis.