Results: Overall incidence of complications between devices was significant: 9.6 per 1000 days PICCs and 2.3 per 1000 days for ports ($p = 0.054$). Ports were superior to PICCs in terms of infection (11% v 31%; $p = 0.014$). Time from device insertion to infection averaged 33 days for ports and 3 days for PICCS. 7.8% of PICC lines dislodged. There was no significant difference between the port and PICC group with respect to thrombus formation and withdrawal occlusion. Port extrusion and palpitations occurred in 1.4% port population. Hospital stay due to device related complications were comparable. The mean duration of a chemotherapy course was 145 days for PICC line group and 130 days for the port group. 21% of subjects with implanted ports received a second course of chemotherapy through the device. The PICC line is logistically easier to insert and remove. The total cost of a PICC line was less expensive than a port (*432.00 euro V *2,711 euro).
Conclusion: Although the rate of complications was statistically more significant in PICCs, further analysis demonstrated that the type and site of these complications did not warrant substantial intervention compared to ports. This combined with the lower costs, would justify more extensive use of PICC lines in selected patients.
These findings highlight the need to conduct a larger study to further evaluate the cost effectiveness of both devices.

1564 ORAL

Substitution of the heparinized solution with the use of positive pressure and a normal saline solution when washing indwelling ports in oncological patients

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Background: Since literature is still unclear and there is no available data regarding the correct maintenance of Ports, we would like to evaluate if a correct technique to maintain positive pressure during washing can replace the necessity of using heparinized solutions. The confirmation of this hypothesis could favour self-Port management by patients, avoiding patient anxiety and infection risk (eg. dilution of heparin).
Material and Methods: From September 2004 to April 2005 we enrolled 150 patients with advanced solid tumours undergoing chemotherapy or other intravenous pharmacological treatments (eg. diphosphonates) weekly or at least every three-four weeks through an implanted Port. They signed informed written consent. In these patients at the end of chemotherapy or other pharmacological treatment administrated we washed the port with 20 ml of physiologic solution maintaining positive pressure until needle removal. Patients that underwent continuous infusion were not included. We evaluated Port functioning every time at the moment of taking blood samples and the our results were classified in:
a. Normal (correct functioning of Port);
b. Partial occlusion (we were able to infuse but not to take blood);
c. Complete occlusion (we were not able to infuse or to take blood);
Results: 109 patients have been evaluated because they concluded at least three months on study. In 800 observations we found 788 correct functioning Ports and 12 partial occlusions of which only one of them was found for two consecutive times. We haven't observed any infections or complete occlusions. Among the 12 cases with partial occlusion there was no significant correlation with washing frequency or Port anatomic position. Recruitment is still open.
Conclusions: Our data are encouraging and confirm the importance of a correct injection technique instead of Heparin use to preserve Port functioning. We observed a lower incidence of complications than what was described with the use of heparinized solution, but a second phase of study will certainly be necessary to evaluate and confirm our results by patients self care in the home environment.

1565 ORAL

Objective measurements of radiotherapy induced erythema in breast cancer patients treated with electrons to 50 Gy after mastectomy

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Background: Although Radiotherapy is an important cancer treatment method, it is afflicted with adverse side effects. Breast cancer is the most frequent cancer form among women in Sweden with about 6300 new cases per year. Up to 95% of patients treated with external radiotherapy will experience some form of skin reaction with individual differences. Most studies validate the extent of erythema with subjective analysis such as visual inspection. In the present study, different techniques were implemented to monitor erythema in an objective manner. The purpose was to present evidence for individual differences in the radiation response of human skin treated with high energy electrons.
Material and Methods: The participants ($n = 50$) were women with breast cancer who had undergone total mastectomy and were subjected to treatment with high energy electrons; 2 Gy/day for a total of 50 Gy. The skin of the patients was measured with Laser Doppler and a Digital RGB camera. The reference measurement is the measurement taken before treatment (digital photography) or on unradiated skin (laser doppler). The Laser Doppler measurements are univariate average perfusion results over an area of 7 cm^2. The digital images were converted to multivariate data by taking the average, standard deviation and skewness of the red, green and blue channels.
Analysis: The Laser Doppler data can easily be converted to univariate curves. For the image data, the data space was reduced from the original nine variables to two scores by principal component analysis. The two scores explain 99% of the total variance.
Results: For many of the patients, the Laser Doppler results showed an increase in average perfusion, but some patients showed no changes at all. The standard deviation of perfusion without radiation was 17 units. Given this it can be shown that many patients end up higher than three standard deviations above the mean during radiation, usually after a dose from 34 Gy-50 Gy. The multivariate results of the camera data are shown in a score plot of the two largest scores (95.3 resp. 3.7%). The score plot shows a high variation in the data, but also a marked difference between nonirradiated skin and skin radiated with over 34 Gy.
Conclusion: With this objective method, it is possible to show an accurate evaluation of the visible acute skin reactions. The result show a high interindividual variation and radiotherapy induced erythema can be a possible marker for individual acute radiosensitivity. Further research is needed to explore if a high grade of erythema will be of any significant importance for local control.

Joint EONS/ESO symposium
Communication with cancer patients

1566 INVITED

Introduction on communication

J.A.D. Foubert. *Erasmushogeschool, Gezondheidszorg, Jette, Belgium*

Communication among human beings is complex and often is neither linear nor necessarily accurate. In the oncology setting, patients interact with a variety of healthcare providers.
Communication skills are the cornerstone of the patient-provider relationship in cancer care.
This relationship can be complicated by patient and family perceptions and expectations, emotional state and disease course. Cancer diagnoses and treatment often produce anxiety in patients and families who need time to discuss their psychosocial concerns.
Therefore healthcare providers must possess excellent communication skills. Lack of these skills can diminish patient disclosure, increase patient anxiety and decrease satisfaction with care. Communication skills are not often assessed by healthcare professionals.
Communication skills for all oncology professionals are worthy of evaluation and development as an important component of oncology care (Fallowfield et al., 2002).
Oncology nurses are aware of the need for sensitive communication between patients and their providers and a number of training programs are existing.
Future research is needed to assess the flow, content and style of communication at particular points in patient's disease and treatment. Finally, standardized observational instruments are needed to assess the effectiveness of communication skills training programs.

References

[1] Clinical Journal of Oncology Nursing, vol. 9, number 3, the effectiveness of skills training workshops.

1567 INVITED

Communication needs of cancer patients

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The biggest problem faced by cancer patients is access to information – that was the result of a survey of 130 patient organisations carried out by the European Cancer Patient Coalition (ECPC) in 2004. Second biggest problem – access to appropriate treatment.