carcinoma thyroid patients and follicular thyroid were 87[12.7%]. Out of 20 males who had follicular carcinoma thyroid 11 [55%], majority of them were in the third and fourth decades. Out of 67 females who had follicular carcinoma thyroid 16[23%] had bone metastases, majority of them were in the fifth and sixth decade.
Results: Out of 87 patients with bone mets, 27 (31.03%) presented with bone metastases, the commonest being skull and pelvis. 4 patients (14.81%), had metastasis in more than one site. 10 (37.03%) patients presented primarily as bone metastases. 3 (11.11%) patients had external radiotherapy to the bone for palliative pain relief. 7 patients (29.92%) lost follow up. 9 (33.33%) had two year follow up with an average ablation dose of 190MCIU and the disease remains static. 3 (11.11%) patients with an average 400MCIU as ablation dose had progressive disease. 8 (29.62%) patients had regression of the lesion with an average dose of 270MCIU and they were followed up for an average of 6 years. All the patient had residual disease in the neck for which I131 ablation was done with an average dose as 90 mciu. The commonest site of regression were spine and long bones. All patients with static or progressive disease had initial high thyroglobulin value of more than 300.
Conclusion: Bone metastases more common in males in third and fourth decades and they have more chance of having bone Mets with follicular carcinoma thyroid. 30% of the patients can have regression of their bone metastases with repeated I-131 ablation up to 1000MCIU and initial high thyroglobulin is an indicator of poor prognosis. External radiotherapy can be given to alleviate bone pain.

Haematological Malignancies

Oral presentations (Wed, 26 Sep, 09.00−11.00)
Leukaemia, lymphomas, transplantation (adults)

6000 ORAL

Quality assessment of FDG PET imaging in clinical trials: definition of standard indicators and longitudinal assessment in patients treated for lymphoma

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Introduction: F-18 FDG PET is widely applied in clinical oncology. It remains a heterogeneous process. A recent consensus was unable to provide a solution for quality assessment (Juweid et al, 2007). We developed a method for quality control (QC) and validated it longitudinally in a cohort of patients treated for lymphoma.
Material and Methods: PET scan was performed in 79 subjects using a PET/CT Biograph 16. Careful and reproducible protocols of acquisition and analysis were applied. QC method was based on data of 30 normal subjects and further validated using longitudinal data of 153 PET scans/49 patients under treatment for lymphoma and followed for up to 32 months. Mean standardized uptake values (SUVm) were obtained for normal tissues (lung, liver, and trabecular bone of L4 vertebral body). Two observers performed blind analyses in order to calculate %CV and least significant changes for a 95% level of confidence (LSC-95%). QC corresponded to lower/upper limits of acceptance (mean SUV ± 2 SD). These limits were compared to LSC-95% values. Longitudinal QC was performed by identifying SUV changes larger than LSC-95% between exams.
Results: Tissue specific SUVm of PET averaged (1SD) was 0.43 (0.10), 2.21 (0.44) and 1.72 (0.48) for liver, lung and bone in normal subjects while, for patients with lymphoma, it was 0.41 (0.11), 2.03 (0.45) and 1.94 (0.72). For normal subjects, LSC-95% was 0.3, 1.3 and 1.2, enabling to calculate the lower/upper limits: 0.90/3.52, 0.12/0.74 and 0.28/3.16. Among the 153 PET exams analyzed, only 2 exams with pulmonary SUVm and 12 exams with bone SUVm values were above the defined upper limit. All hepatic SUVm were within normal range. Simultaneous changes in the 3 parameters were never found. Intra-subject longitudinal QC identifies 12 patients with transient significant changes of normal bone SUVm and only 1 patient with transient significant change of normal pulmonary tissue SUVm. For bone reference, transient increase was correlated to administration of GCSF while for lung tissue, it was related to occurrence of pulmonary infectious disease. Chemotherapy never altered SUVm of hepatic tissue.
Conclusion: Quality assessment of FDG PET imaging is feasible using SUVm of reference tissues (lung, liver and bone). Applying the calculated lower/upper limits of references, QC enables to identify inappropriate PET scans. When applying LSC-95%, discrimination between effect of treatment and non-specific technical effect can be performed.

6001 ORAL

Immunosuppressive TLI-based reconditioning regimens enable engraftment after graft rejection or graft failure in patients treated with allogeneic hematopoeitic stem cell transplantation

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Background: Primary non-engraftment/ early graft rejection after allogeneic hematopoietic stem cell transplantation (HSCT) is a rare but life-threatening complication after allogeneic HSCT. Standardized treatment protocols addressing the type of the reconditioning regimen are lacking. As total lymphoid irradiation (=TLI) confers substantial immunosuppression with relatively little toxicity we speculated that a TLI-based approach could be useful for reconditioning prior to a second allogeneic HSCT.
Materials and Methods: We identified a cohort of 14 patients (7 adults – $\geqslant$18 years, median age 48 years, range 27−53 years – and 7 children – <18 years, median age 9 years, range 4−16 years) with primary non-engraftment (n = 7) or early graft rejection (n = 7) after conventional myeloablative allogeneic HSCT for different hematologic diseases. Patients were treated with a TLI-based reconditioning regimen with 7 Gy single dose application (median dose rate 1.18 Gy/min, range, 0.55−2.13 Gy/min) plus anti-T lymphocyte antibody OKT3 (n = 11) and/or antithymocyte globulin (n = 7)/fludarabine (n = 9), and/or thiotepa (n = 5), followed by an infusion of peripheral blood stem cells (n = 13) or bone marrow stem cells (n = 1) from related/unrelated donors.
Results: The median interval between initial transplantation and retransplantation was 38 days (range, 23–173 days) for the overall group, 36 days (range, 23–173 days) for adults and 41 days (range, 31−61 days) for children. All patients were transplanted in aplasia. 11/14 recipients were evaluable for engraftment following TLI-based reconditioning as three adults died early (day 2/5/15) after second transplantation due to infectious complications. Engraftment in four adults was seen after a median of 12 (range 10−18) days. In seven children engraftment occurred after a median of 10 (range 9−32) days. TLI-based reconditioning was well-tolerated with no severe organ toxicity. Median overall survival/ disease-free survival for the whole cohort was 140 days (range 5–1268 days). After a median follow-up of 681 days, in children disease-free/ overall survival are 85.7%/ 85.7%, respectively. Despite engraftment in 4 adults none of them survived due to fatal GvHD (n = 1), infection (n = 1), disease relapse (n = 1) and acute respiratory distressed syndrome (n = 1).
Conclusion: In patients with graft failure or graft rejection after allogeneic HSCT, TLI-based reconditioning regimens allow sustained engraftment paralleled by favourable toxicity profile potentially leading to long-term survival.

6002 ORAL

Involved-field radiotherapy (IFRT) and involved-nodal radiotherapy (INRT) as a component of combination therapy for limited stage Hodgkin lymphoma: a question of field size

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Background: Combination therapy is the standard of care for limited stage Hodgkin lymphoma (HL). The radiotherapy component has evolved from extended-field (EFRT) to involved-field radiotherapy (IFRT), lowering radiation-induced toxicity whilst maintaining high cure rates. Recent publications suggest a further reduction of field size to involved-nodal radiotherapy (INRT). Although guidelines have been published, there is no uniform consensus on the optimal definition for radiotherapy field size. Furthermore, there is no published evidence to demonstrate that field size can be reduced from IFRT to INRT while maintaining treatment efficacy.
The aim of this study is to determine the influence of field size on patterns of relapse in limited stage HL treated with combination therapy. Is INRT associated with increased marginal recurrences?
Materials and Methods: Using the BC Cancer Agency Lymphoid Cancer Database, 325 eligible patients were identified: limited stage HL diagnosed between 5/1/89 and 4/1/05, and treated with combined chemo/radiotherapy. According to prospective protocols, patients were treated with EFRT until