be discussed, based on findings from individual trials and systematic reviews.
3. Overview of the applications of PROMs in daily oncology practice to support and improve individual patient care.

The presentation will briefly describe technical aspects of real-time data collection (such as the use of touch-screen computers, mobile devices and web-based data collection). The main focus will be on the impact of PROMs on process of care (doctor-patient communication, decision-making) and on patient well-being and satisfaction with care. The experience of using PROMs during cancer chemotherapy in Leeds Cancer Centre, Leeds, UK will be presented.

Scientific Symposium (Tue, 22 Sep, 09:00−11:00) **Role of PET imaging**

95 INVITED

New PET-Tracers for imaging pathophysiology and response

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Metabolic imaging with PET and PET/CT using F-18 fluordesoxyglucose is now a routine tool in clinical practice for therapy response evaluation, viability assessment of posttherapeutic residual masses, restaging and potentially staging in Hodgkin's disease and Non-Hodgkin's lymphoma. Beyond imaging glucose metabolism, important molecular and cellular targets and pathophysiological important pathways can be addressed: these include amino acid transport/protein synthesis for imaging multiple myeloma with radiolabelled amino acids such as C-11 methionine, proliferation with F-18 fluorothymidine angiogenesis with radiolabelled RGD-peptides, apoptosis with F-18 labelled anexin-V, membrane turnover with F-11/F-18 choline, tumour receptors and antigens with CD20, CD33, CD45 or CD66 radiolabelled monoclonal antibodies. Advanced pharmacokinetic modelling improved cellular targeting significantly and is available for more efficient therapeutic targeting when antibodies are labelled with therapeutic radionuclides. Intense preclinical research is focussed on development of measuring tumour cell tracking, imaging of tumour stem cells, cell signalling and gene expression with appropriate probes and reporter gene approaches. Multimodality imaging with PET/CT, SPECT/CT, PET/MR both in small animal and clinical/preclinical settings will close the gap between traditional anatomical based morphological and molecular imaging based functional imaging approaches.

96 INVITED

PET imaging of non-Hodgkin lymphoma: defining methodologies for early prediction of response

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Achieving a complete response to first-line therapy is an important goal in managing patients with aggressive lymphomas such as diffuse large B-cell lymphoma (DLBCL), as long-term outcome is greatly improved compared with those patients with residual disease. ^{18}F- Fluorodeoxyglucose positron emission tomography (FDG-PET) is emerging as a powerful technique for the assessment of response in patients with DLBCL and also appears to be a valuable predictor of long-term outcome. A number of studies have shown that patients who have a negative PET scan (during the induction phase or after several cycles of induction chemotherapy) have a significantly better event-free survival (EFS) than those who have an abnormal PET scan. This suggests that it may be possible to use FDG-PET to identify poor responders during the course of induction therapy and modify their treatment accordingly. This approach is being investigated in an ongoing GELA (Groupe d'Etude des Lymphomes de l'Adulte) study (07−3B Study). Patients under the age of 60 years of age and with an age adjusted-IPI score of 2–3 were randomized to receive four cycles of either R-ACVBP14 + intrathecal methotrexate (MTX it) + G-CSF (group A) or R-CHOP14 + MTX it + G-CSF (group B). PET assessments are performed at baseline and after the second and fourth cycle of therapy. Further treatment is then given according to response, as assessed by PET. Patients from either treatment group who are PET positive after the fourth cycle of treatment leave the study to receive salvage therapy. Those who are PET negative after both the second and fourth cycle of treatment continue to receive induction therapy (group A: MTX iv, R-ifosfamide-vepeside, cytarabine; group B: 4 cycles of R-CHOP14 + G-CSF), while those who are PET positive after the second cycle but PET negative after the fourth cycle receive more intense, consolidation therapy − MTX iv followed by Z-BEAM (^{90}Y-ibritumomab tiuxetan plus BEAM) with autologous stem cell support. Indeed, for patients who are PET positive at the end of induction therapy, consolidation therapy involving ^{90}Y-ibritumomab tiuxetan may be an appropriate option. The results of this study should help determine the value of using PET assessment during the course of induction therapy to modify the course of treatment and also the role of ^{90}Y-ibritumomab tiuxetan as consolidation therapy in poor risk patients with DLBCL.

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97 INVITED

Role of FDG-PET and PET/CT in treatment planning of other haematological tumours

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FDG-PET has been extensively investigated in Hodgkin lymphoma, whereas less data are available in myeloma and leukemias.
Hodgkin lymphoma (HL): Initial staging determines the treatment plan. PET detects more disease sites than conventional imaging methods. However, there are methodological problems, in particular the lack of a valid reference test. Nevertheless, PET is today considered part of the routine staging of HL. In published series PET changed disease stage in 10−40% of cases, more often upstaging than downstaging patients, leading to changes in treatment strategy in about half. Whether these changes will lead to improvement in outcome is still unknown.
Early response evaluation with PET after 1−2 cycles of ABVD is highly predictive of outcome, but whether treatment should be modified on this basis is not known. Moreover, the predictive value of an early PET may be lower with more intensive regimens like BEACOPP. Randomized trials are testing if treatment reduction in PET negative and treatment intensification in PET positive patients can improve outcome. Despite the lack of randomized evidence, treatment intensification in patients with a positive PET-scan after 4 cycles of therapy has become a widespread practice.
Radiotherapy in HL has changed dramatically. The old treatment strategy maximized the use of radical radiotherapy, and extensive treatment fields were used. In the modern era, radiotherapy is part of a combined modality treatment, and smaller volumes and doses are employed. In most situations the volume for radiotherapy is only the initial (pre-chemotherapy), macroscopically involved tissue volume in early stage disease, and residual masses after chemotherapy in advanced disease. This has led to dramatic reductions in the normal tissues being irradiated, and equally dramatic reductions in the risk of serious long-term complications. One major problem with more and more conformal radiotherapy is the need to define the target volume very precisely to avoid geographical misses. Image guidance is essential. PET is increasingly being incorporated in the planning process, and changes treatment fields in about 1/3 of early stage patients. To be able to use combined PET and CT for the planning of