5th INTERNATIONAL WORKSHOP ON INTERIM-PET IN LYMPHOMA

Poster Discussion – technical abstracts

Menton (France), Palais de l'Europe,
September 18-20, 2014

issues addressed

- importance of central review panel
- application of D 5PS to the end therapy PET in FL
- variability of liver uptake btw baseline & int PET
- int-PET as a biomarker of response in NHL
- hematologist's perspective on PET reporting and ceCT
- variations of PET operations

- FLT and FDG PET for early therapy evaluation
- 89Zr-rituximab and 89Zr-ofatumumab in DLBCL

- evaluation of int-PET using quantitative PET parameters *
- dual-time PET in suspected malignant lymphoma *
- clinical trial qualification of PET scanners & cross-calibration for SUV analysis *

B 11 - ***INITIAL EXPERIENCE ON THE APPLICATION OF DEAUVILLE CRITERIA TO THE END THERAPY PET IN FOLL 12 STUDY.*** A.Versari, S.Chauvie , A.Franceschetto, L.Guerra, G.Storto, S.Peano, A.Dondi, S.Luminari, M.Federico - ITALY

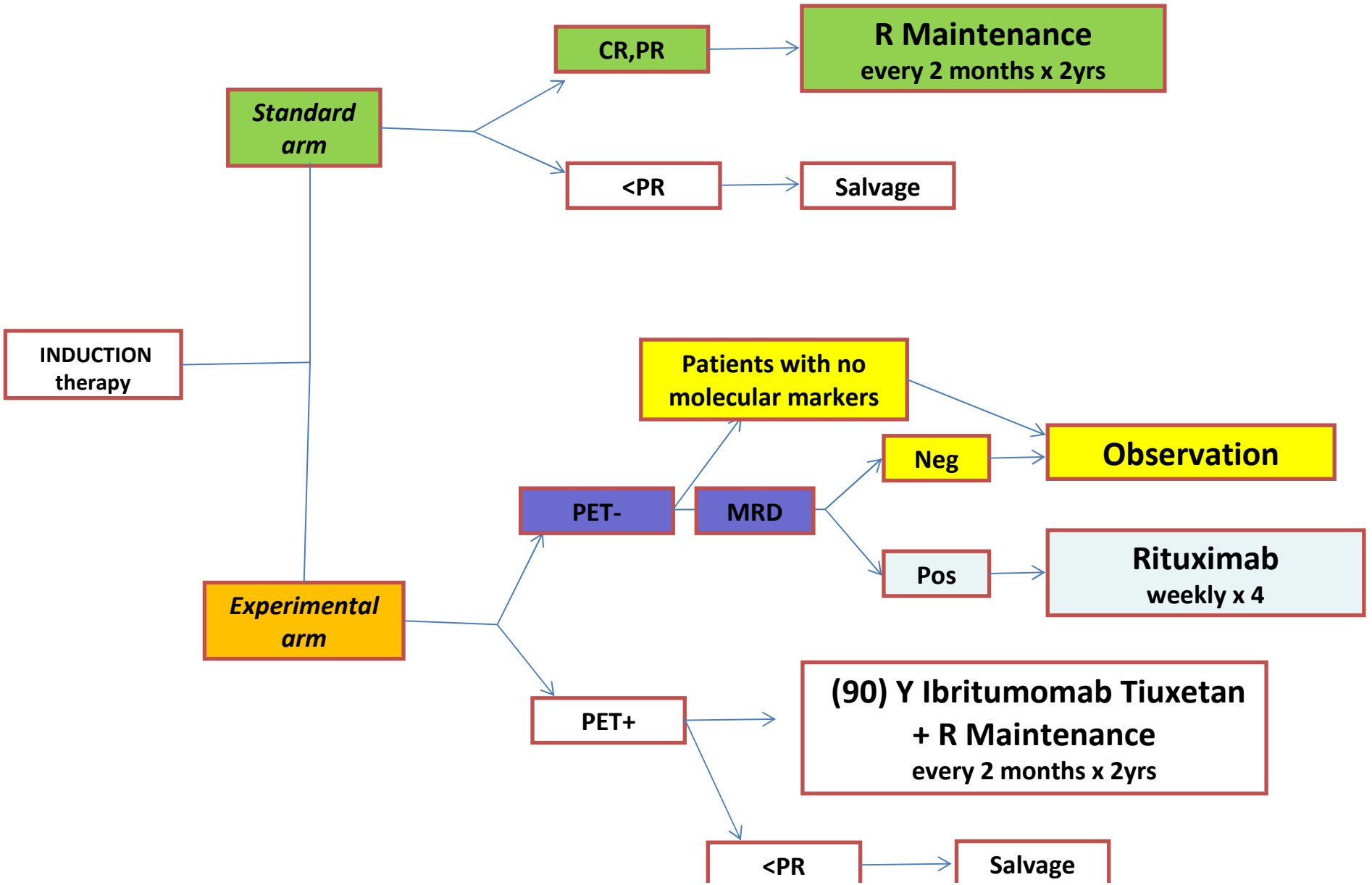
Aim: To evaluate whether a PET and MRD response-based maintenance therapy is more effective as measured by PFS than a std maintenance therapy with Rituximab in pts with untreated, advanced FL

33 ctrs, retrospective, PET0, PET4 (not mandatory), end therapy PET, (END-PET), R-CHOP-21

Therapy modified based on MRD and End-PET

Five expert reviewers, 5PS, scores 4–5 positive

FOLL 12 – TRIAL: randomized, multicenter, phase III, response-adapted trial to define maintenance after std rx in advanced FL



Results

- All scanners had Clinical Trial Qualification by the Core Lab in Cuneo
- After training (20 cases), agreement among the reviewers increased

agreement among readers fair

Centers	Pts enrolled	End-PET Reviewed	Positive PET	Reviewers	Concordance α	Concordance κ
33	108	51	6 (12%)	5	0.66	0.44-0.89

Concordance 100%	Concordance 80%	Concordance 75%	Concordance 60%
43 pts	3 pts	3 pts	2 pts

Conclusions: There is a good concordance among central reviewers using the 5PS confirming that it is a reliable tool for End-PET reporting in advanced stage FL. However, a period of training is essential.

D 1 – *VARIABILITY OF 18-FDG LIVER UPTAKE BETWEEN BASELINE AND INTERIM PET/CT IN PATIENTS WITH LYMPHOMA.* AS. Cottereau, S. Kanoun, E. Itti, C. Haioun, S. Legouil, M. André, O. Reman, J. Chalaye, RO. Casasnovas, M. Meignan. Créteil, Dijon, Caen, Nantes, France ; Louvain, Belgique

Aim: to evaluate the intrapatient variability of FDG liver uptake after 2 courses of chemo in DLBCL or HL pts

775 pts from randomized phase III studies, prospective, PET0, PET2:

- 162 DLBCL from GAINED 81 ***R-ACVBP*** and 81 ***R-CHOP***
- 514 HL from the std arm of AHL 2011, ***escBEACOPP***
- 99 early stages HL from H10, ***ABVD***

Liver SUVmax calculated as the mean of 2 independent measures from a VOI centered in the right lobe of the liver

Results

- Fixed PET acq protocol: Data available in 676 pts: no significant difference in inj-acq interval, inj dose and glucose level btw PET0 and PET2
- Interim liver SUVmax was higher than that of the baseline
- No difference btw early and advanced stage pts

	Mean SUVmax 0	Mean SUVmax 2	Mean △SUVmax / %
CHOP	2,94 (CI=2,78-3,10)	3,16 (CI=3,02-3,31) *p=0,0002*	0,22 / **+7,5%**
ACVBP	3,12 (CI=2,96-3,28)	3,34 (CI=3,20-3,47) *p=0,0002*	0,21 / **+7%**
BEACOPP	2,70 (CI=2,64-2,76)	2,93 (CI=2,87-2,99) *p<0,0001*	0,23 / **+8%**
ABVD	2,35 (C=2,24-2,46)	2,53 (CI=2,42-2,64) *p=0,001*	0,18 / **+7,6%**

Conclusions: Regardless of chemo, liver SUVmax increases after the 2 cycles of chemo for all pts,

•suggesting a variation in the hepatic metabolism or liver glucose consumption

•The impact of the liver SUVmax fluctuation during treatment on the visual analysis of int PET is probably minor; it **increased the specificity of DS 4**

•the eye is sensitive to differences in contrast; PET-CT images should be scaled to a fixed SUV display and color table

GROUPE HOSPITALIER
HENRI MONDOR
ALBERT CHENEVIER - GEORGES CLEMENCEAU
JOFFRE-DUPUYTREN - EMILE ROUX

D 3 - *Validation of interim PET as a biomarker of response in NHL – a study on PET timing, therapies, response criteria, type of NHL and cost-effectiveness.* JM Zijlstra, dept Hematology, OS Hoekstra, dept Radiology and Nuclear medicine, HCW de Vet. VU Univ Med Ctr, Amsterdam, on behalf of PETRA Consortium

Aim: to validate FDG-PET as a biomarker of response in first-line NHL therapy using meta-analysis of individual pt data (IPD) and to determine its cost-effectiveness

Rationale: There is a need for an integral approach using results of various studies
It is unclear to which extent conflicts in NHL are due to
- timing differences during therapy,
- PET reading criteria,
- different therapies and/or different subtypes of lymphoma.

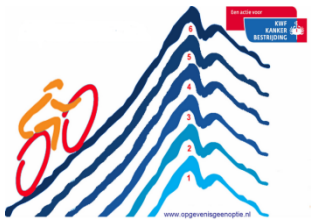
Objectives
- build a database of clinical studies on int-PET in NHL
- determine optimal timing of int-PET during first-line therapy
- determine which response criteria better predict response and PFS
- assess therapy effects on performance of int-PET
- assess NHL subtype effects on performance of int-PET

PETRA Consortium

PETRA database will be a shared database of IPD of int FDG-PET studies

comprehensive int-PET data meta-analysis, including metabolic volume, heterogeneity and CT parameters

Only after these issues are solved, this technique can be implemented in daily clinical practice



D 4 - *HEMATOLOGISTS' S PERSPECTIVES AND DESIRES ON REPORTING OF PET AND CONTRAST ENHANCED CT IN MALIGNANT LYMPHOMA IN THE NETHERLANDS* A.I.J. Arens, B. de Keizer, O.S. Hoekstra, C. Schaefer-Prokop, J. Stoker, J. M. Zijlstra on behalf of the HOVON Imaging Working Group in the Netherlands.

Aim: investigate the variation in reporting PET and ceCT in lymphoma and the hematologists' expectations regarding format, content, quality.

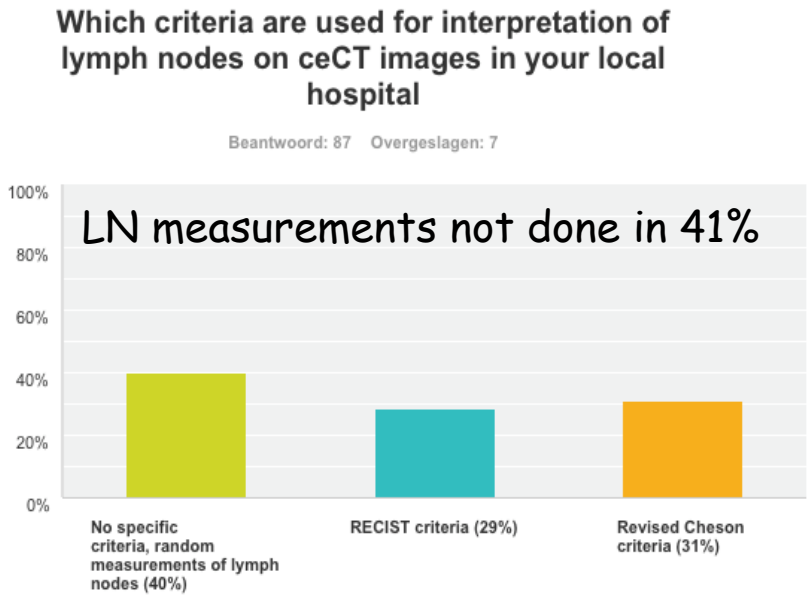
A nationwide web-based survey, on the actual reporting, preferences and need for guidelines on reporting

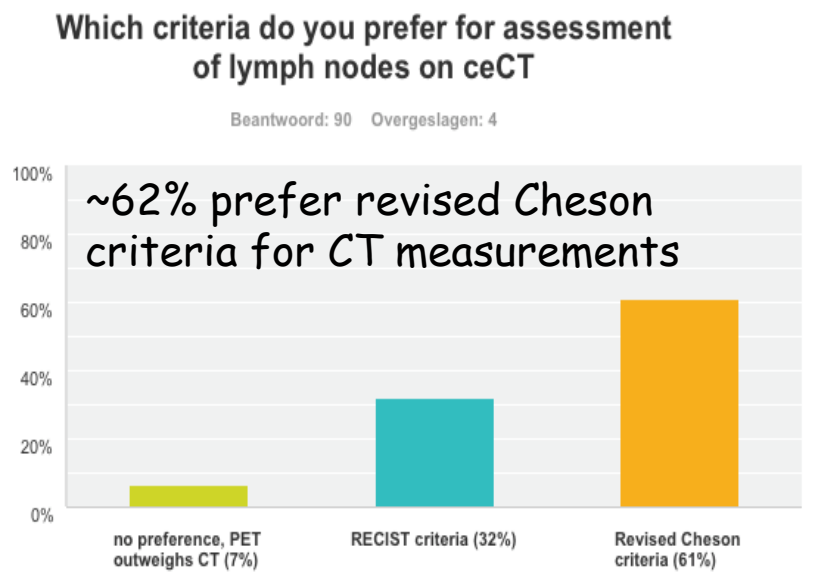
Results: 38% responded ; 26% teaching hospitals, 74% non-teaching hospitals with or without PET/CT

combined report of PET and CT in 48% and desired in 84%

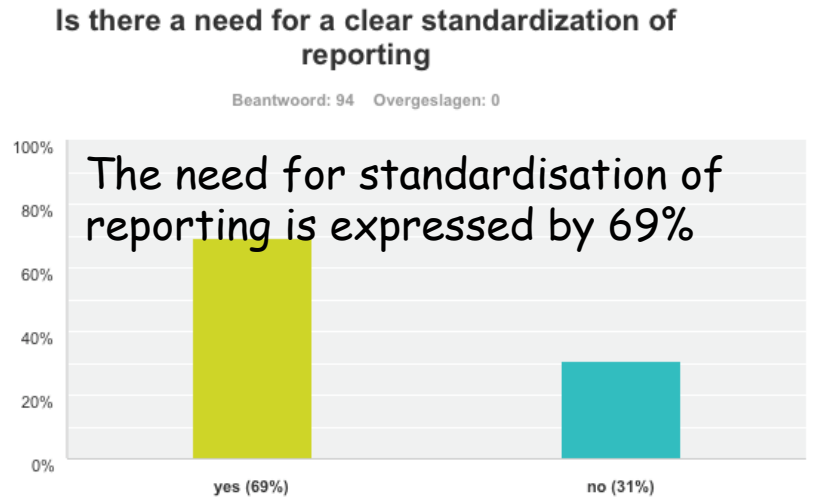
In 46%, format is divided into body parts, 21% into disease localisations
Preference for body part is 47% and per disease localisation 36%

5PS used in 49% and desired in 62%
All hospitals use visual criteria and 29% request SUV-based assessment





- Ann Arbor classification mentioned in 29% and desired in 42%
- In 67%, the multi-disciplinary meeting found important on the interpretation
- **Conclusions**: considerable variations in methods of reporting of PET/ceCT. There is a need for standardisation of reporting to optimize PET/ceCT in patients with malignant lymphoma.



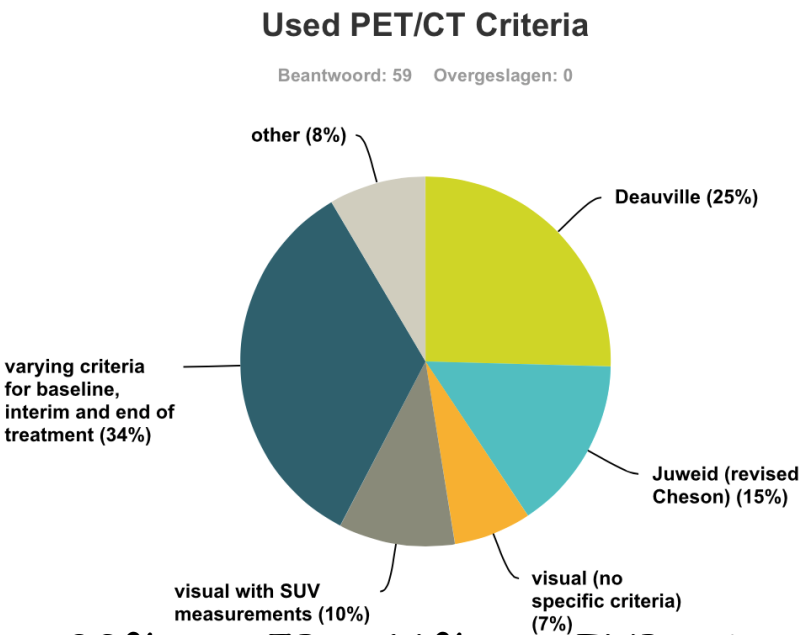
D 5 - *VARIATIONS IN PET/(CONTRAST ENHANCED)CT OPERATIONS AND REPORTING: RESULTS OF A NATIONAL SURVEY OF NUCLEAR MEDICINE PHYSICIANS IN THE NETHERLANDS.* B. de Keizer, A.I.J. Arens, O.S. Hoekstra, C. Schaefer-Prokop, J. Stoker, J. M. Zijlstra on behalf of the HOVON Imaging Working Group in the Netherlands.

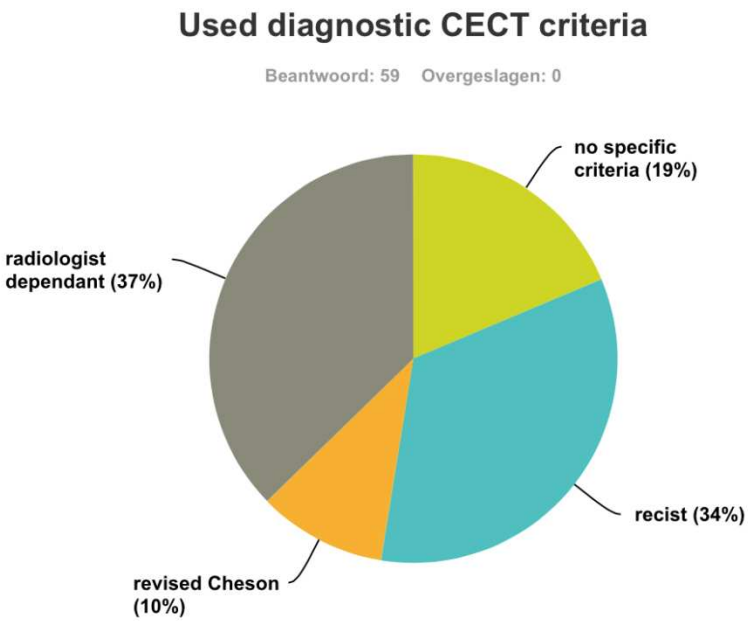
Aim: To investigate the variation in performing and reporting of PET and contrast enhanced CT (CECT) in malignant lymphoma

A nationwide web-based survey among nuclear medicine physicians, on the acquisition of PET and CECT, method of reporting PET/CECT and the criteria used for response assesment

36% responded ; 29% academic hospitals, 71% non-teaching

- 59% combine the acquisition of PET and CECT
- A combined report of PET and CECT is performed by 38%,
- in 39% a separate report of the CECT is reported





- 23% use 5PS, 16% use IHP criteria, 11% use SUV and 34% use different criteria depending on timing of PET in treatment schedule
- LN measurements done by rIWG in 34%, RECIST in 11% and in 38% variable
- Ann Arbor classification mentioned in 34%
- 61% report the impact of tm-board meetings on their interpretation
- The need for standardisation of reporting is expressed by 61%

Conclusions: considerable variation in PET/CECT operations/reporting. These results underline the need for standardisation for uniform operations and reporting of PET/CECT

PET SCANNER CLINICAL TRIAL QUALIFICATION FOR WORLDWIDE ONCO-HAEMATOLOGICAL STUDIES

68GE-PHANTOM CROSS-CALIBRATION OF PET SCANNERS FOR SUV QUANTITATIVE ANALYSIS

Chauvie S1, Biggi A1, Versari A2, Guerra L3, Ceriani L4, Coronado M5, Luminari S6, Federico M6, Zucca E4, Martelli M7, Caballero M8, A Gallamini

C 2 - ***Assessment of different thresholds for calculating the total metabolic volume (TMTV) in FDG PET to predict survival in Hodgkin lymphoma.***

S Kanoun, I Tal, A Berriolo-Reidinger, C Rossi, J-M Reidinger, J-M Vrigneaux, L legrand, O Casasnovas, F Brunotte, A Cochet

C 5 – ***Beth Israel plugin : A new free software tool for metabolic tumor volume calculation on PET/CT***

Salim Kanoun, Ilan Tal, Alina Berriolo-Reidinger, Cedric Rossi, Jean-Marc Reidinger, Jean-Marc Vrigneaux, Louis Legrand, Olivier Casasnovas, Francois Brunotte and Anlexandre Cochet
combined with C2

D2 DUAL TIME POINT 18F-FDG PET/CT IN THE EVALUATION OF PATIENTS WITH SUSPECTED MALIGNANT LYMPHOMA

Karen Juul Mylam, Anne Lerberg Nielsen, Poul-Flemming Høilund-Carlsen, Abass Alavi, Oke Gerke, Poul Erik Braad, Anne Birgitte Mehlsen, Morten Damgaard, Lars M Pedersen, Martin Hutchings