Project 11a: QIBA (NIBIB) 6-month Interim Report (Dr Otto Hoekstra)
Deliverable 2. Study quality estimation using (modified) QUADAS.
Methods
We identified 32 eligible studies. We assessed the methodological quality using a modified QUADAS (table 1).

Table 1. Modified QUADAS list

Quality item	*Positive score*
1) Was the spectrum of patients representative of the patients who will receive the test in practice?	Patients with solid extracerebral tumors receiving neoadjuvant therapy including systemic treatment
2) Were selection criteria clearly described?	Inclusion and exclusion criteria clearly described.
3) Is the reference standard likely to correctly classify the target condition?	Histopathological analysis after treatment used as reference standard.
4) Did the whole sample or a random selection of the sample receive verification using a reference standard?	All patients verified with histopathological analysis.
5) Did patients receive the same reference standard regardless of the index test result?	All patients received the same reference standard regardless of FDG PET result
6) Was the reference standard independent of the index test (i.e. the index test did not form part of the reference standard)?	FDG PET result was not part of the reference test.
7) Was the execution of the index test described in sufficient detail to permit replication of the test?	FDG PET protocol (scanner type, acquisition, reconstruction method, fasting period, glucose levels, FDG dose, time interval between FDG and scanning) and analysis method (including definition of SUV/DUR/TBR , ROI/VOI methods) and interpreter(s) described.
8) Was the execution of the reference standard described in sufficient detail to permit its replication?	Sufficient details or citations reported to permit replication of reference standard.
9) Were the index test results interpreted without knowledge of the results of the reference standard?	Interpretation of FDG PET performed without knowledge of histopathological analysis (if not mentioned, scored as indeterminate (nm))
10) Were the reference standard results interpreted without knowledge of the results of the index test?	Interpretation of reference test results performed without knowledge of FDG PET findings (if not mentioned, scored as indeterminate (nm)).
11) were the same clinical data available when the test results were interpreted as would be available when the test is used in practice?	Description of available clinical data during FDG PET interpretation described.

12) were uninterpretable/intermediate test results reported?	Number of uninterpretable FDG PET or intermediate FDG PET results reported (if not mentioned, scored as negative).
13) Were withdrawals from the study explained?	Number of withdrawals and reason for withdrawal mentioned (if not mentioned, scored as ideterminate (nm)).
14) was comparator review bias avoided?	FDG PET blinded to other imaging modalities (if not mentioned, scored as indeterminate (nm)).
15) was the interobserver reproducibility of 18-F FDG PET described?	FDG PET assessed independently by at least two observers, interobserver agreement reported

Results

Author/item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Schulte	+	-	+	+	+	+	+*	+	+	nm	-	+	+	+	+
Franzius	+	+	+	+	+	+	+*	+	+	+	-	nm	nm	+	-
Smith	+	-	+	+	+	+	+	+	+	+	+	nm	nm	nm	-
Nair	+	-	+	+	+	+	+*	-	nm	nm	-	+	nm	nm	-
Brucher	+	+	+	-	+	+	+	+	nm	+	-	-	nm	nm	-
Ryu	+	+	+	+	+	+	+	-	+	-	-	+	nm	+	-
Kitagawa	+	-	+	+	+	+	+	+	+	+	-	-	nm	-	-
Brink	+	-	+	+	+	+	+	+	nm	nm	-	-	nm	nm	-
Chen	+	-	+	+	+	+	-	+	nm	nm	-	-	nm	nm	-
Wieder	+	-	+	-	+	+	+	+	nm	+	-	-	nm	nm	-
Song	+	+	+	+	+	+	-	-	nm	nm	-	-	+	nm	-
Cascini	+	-	+	+	+	+	+	+	nm	+	-	-	nm	nm	-
Huang	+	-	+	+	+	+	-	+	nm	nm	-	-	nm	nm	-
Wieder	+	-	+	+	+	+	+	+	nm	+	-	-	nm	nm	-
Iagaru	+	-	+	+	+	+	-	-	nm	nm	-	-	nm	nm	-
Nishiyama	+	-	+	+	+	+	+	+	nm	nm	-	-	nm	nm	-
Benz	+	+	+	+	+	+	+	+	+	+	-	-	nm	-	-
Smithers	+	+	+	+	+	+	-	+	nm	nm	-	-	nm	nm	-
Ye	+	-	+	+	+	+	+	+	+	+	-	-	nm	+	-
Schmidt	+	+	+	+	+	+	+	+	+	nm	-	-	nm	nm	-
Hamada	+	-	+	+	+	+	+	+	nm	nm	-	-	nm	nm	-
Weber	+	+	+	+	+	+	+	+	+	+	-	+	nm	+	+
Martoni1	+	-	+	+	+	+	+	+	nm	nm	-	-	nm	nm	-
Kumar	+	+	+	+	+	+	+	+	nm	nm	-	-	nm	nm	-
Westerterp	+	+	+	-	+	+	+	+	nm	nm	-	-	+	nm	-
Gillham	+	-	+	+	+	+	+	+	nm	+	-	-	nm	nm	-
Heijl	+	+	+	+	+	+	-	+	nm	nm	-	+	nm	nm	-
Martoni2	+	-	+	+	+	+	-	+	+	nm	-	-	nm	+	-
Malik	+	+	+	+	+	+	+	+	nm	+	-	-	nm	nm	-
Janssen	+	-	+	+	+	+	+	+	nm	+	-	-	+	nm	-
Kikutchi	+	-	+	-	-	+	-	+	nm	+	-	-	nm	nm	-

    +   : positive
    -   : negative
   nm : indeterminate
* quality item 7: + score if there is an adequate description of TBR-like characteristics.
Malik replaces Gillham
Martoni2: included 13 patients with recurrent disease from a pool of 80 patients as individual data was reported on them.
Janssen: we extracted and pooled the data published as 2 different articles.

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