

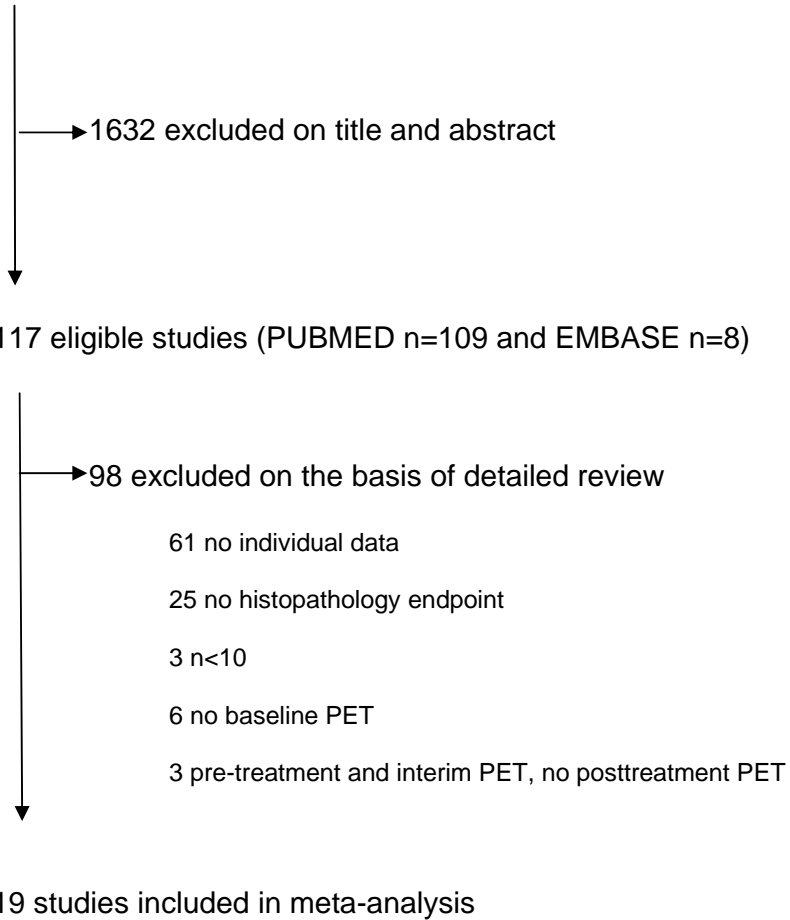
Supplemental Appendix

Article Selection Process

Our literature search using PUBMED (MEDLINE included) and EMBASE (after exclusion of duplicates) identified 917 and 832 potentially relevant articles, respectively (**Supplemental Figure 1**). By scanning the titles and abstract we excluded 808 studies for the PUBMED search and 824 studies for the EMBASE studies. We then retrieved and reviewed 117 full reports for inclusion and excluded 95 studies: 61 studies did not provide (absolute) individual data, 25 studies did not use pathology of a surgical specimen as an endpoint, in 3 studies the amount of patients was less than 10, in 6 studies no pre-treatment PET scan was performed, and in 3 studies a pre-treatment and an interim PET scan were performed, but no posttreatment PET scan. Manual cross referencing (original studies and reviews) did not reveal additional studies.

Supplemental Figure 1

1749 eligible studies (PUBMED n=917 and EMBASE n=832)



Supplemental TABLE 1. Database search

Pubmed search

- #1 "Tomography, emission-computed" [mesh] OR pet [tiab] OR pet/* [tiab] OR petscan* [tiab]
- #2 Emission [tiab] AND (tomograph [tiab] OR tomographs [tiab] OR tomographic* [tiab] OR tomography [tiab] OR tomographies [tiab])
- #3 #1 OR #2
- #4 "Neoplasms" [mesh] OR Cancer [sb] OR cancer* [tiab] OR neoplas* [tiab] OR carcinom* [tiab] OR tumor [tiab] OR tumors [tiab] OR tumour* [tiab] OR malignan* [tiab] OR melanoma* [tiab] OR oncolog* [all]
- #5 "Nervous System Neoplasms" [majr] OR "Lymphoma" [majr] OR "Leukemia" [majr]
- #6 (brain [ti] OR cerebral [ti] OR lymphoma* [ti] OR leukemia* [ti]) NOT medline [sb]
- #7 #5 OR #6
- #8 #4 NOT #7
- #9 "Antineoplastic Agents" [mesh] OR "Antineoplastic Agents" [pa] OR "Combined Modality Therapy" [mesh] OR "Drug Therapy" [mesh] OR "Drug therapy" [sh] OR

EMBASE search

- #1 'Emission tomography'/exp OR pet:ti,ab OR petscan*:ti,ab
- #2 emission:ti,ab AND (tomograph:ti,ab OR tomographs:ti,ab OR tomographic*:ti,ab OR tomography:ti,ab OR tomographies:ti,ab)
- #3 #1 OR #2
- #4 'Tumor'/exp OR 'Abdominal tumor'/exp OR 'Breast tumor'/exp OR 'Cardiovascular system tumor'/exp OR 'Digestive system tumor'/exp OR 'Endocrine tumor'/exp OR 'Head and neck tumor'/exp OR 'Locomotor system tumor'/exp OR 'Neoplasms of the thorax and thoracic cavity'/exp OR 'Pelvis tumor'/exp OR 'Respiratory tract tumor'/exp OR 'Reticuloendothelial neoplasm'/exp OR 'Skin tumor'/exp OR 'Soft tissue tumor'/exp OR 'Urogenital tract tumor'/exp
- #5 'Nervous system tumor'/exp/mj OR 'Lymphoma'/exp/mj OR 'Leukemia'/exp/mj
- #6 #4 NOT #5
- #7 'Radiotherapy'/exp OR 'Drug therapy'/exp OR 'Adjuvant'/de OR 'Antineoplastic agent'/exp
- #8 'Treatment outcome'/exp OR 'Treatment response'/exp OR 'Prognosis'/exp OR 'Cancer staging'/exp OR response*:ti,ab OR responder*:ti,ab OR 'non responding':ti,ab OR 'non responder':ti,ab OR 'non responders':ti,ab
- #9 (marker*:ti OR monitoring:ti) AND (efficacy:ti OR effect*:ti)

antineoplas* [tiab] OR chemotherap* [tiab] OR chemoradiotherap* [tiab] OR
 radiochemotherap* [tiab] OR chemoimmunotherap* [tiab] OR cryochemotherap* [tiab]
 OR combined modality therap* [tiab]

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|-----|--|-----|---|
| #10 | "Treatment Outcome" [mesh] OR Prognosis [mesh:noexp] OR "Neoplasm staging" [mesh] OR "Decision making" [mesh] OR response* [tiab] OR responder* [tiab] OR non-respon* [tiab] | #10 | (marker*:ab OR monitoring:ab) AND (efficacy:ab OR effect*:ab) |
| #11 | (marker* [tiab] OR monitoring [tiab]) AND (efficacy [tiab] OR effect* [tiab]) | #11 | #8 OR #9 OR #10 |
| #12 | #10 OR #11 | #12 | [cochrane review]/lim OR [meta analysis]/lim OR [systematic review]/lim |
| #13 | Systematic [sb] | #13 | 'Case report'/de OR 'Review'/de OR 'Short survey'/de OR 'Note'/de OR 'Editorial'/de OR 'Systematic review'/de OR 'Meta analysis'/de OR 'Letter'/de OR 'case report':ti OR 'case study':ti |
| #14 | Letter [pt] OR Case reports [pt] OR case report [ti] OR case study [ti] OR review [pt] | #14 | #3 AND #6 AND #7 AND #12 |
| #15 | #3 AND #8 AND #9 AND #13 | #15 | (#3 AND #6 AND #7 AND #8) NOT #13 |
| #16 | (#3 AND #8 AND #9 AND #12) NOT #14 | #16 | #14 OR #15 |
| #17 | #15 OR #16 | #17 | #16 AND [humans]/lim AND [embase]/lim AND [1995-2008]/py |
| #18 | #17 NOT (Animals [mesh] NOT Humans [mesh]) | | |
| #19 | #18 Limits: Publication Date from 1995 | | |