

### **Bij 3.2.2 Behandeling - Inschatten overleving**

Vraag 5: Hoe is op basis van een pakket aan factoren zo nauwkeurig mogelijk de overleving in te schatten bij patiënten met spinale metastasen die in aanmerking komen voor een operatie en/of bestraling?

### **Bij 3.3 Behandeling - Radiotherapie**

Vraag 2: Welke techniek (eenvoudige versus advanced technology) en dosis radiotherapie resulteert in de beste uitkomst bij patiënten met spinale metastasen in termen van pijnstilling, mobiliteit, morbiditeit, mortaliteit en kosten?

### **Bij 3.4 Behandeling - Chirurgie**

Vraag 3: Bij patiënten met spinale metastasen heeft chirurgie X in vergelijking met chirurgie Y een betere uitkomst in termen van mobiliteit, morbiditeit, mortaliteit en complicaties, progressievrije overleving?

#### *PICO + selectiecriteria*

Patient population: patiënten met spinale metastasen, cervicale- versus niet cervicale wervelmetastasen

(onderscheidende kenmerken: oorspronkelijke tumor, conditie (bijvoorbeeld Karnofsky), metastasen elders,

lokalisatie wervelmetastase(n), nog systemische opties?, geslacht, leeftijd, prognose)

Intervention: Chirurgie X\*

Comparison: Chirurgie Y

Outcome: mobiliteit (lopen in dagen), morbiditeit (dexamethason gebruik, pijnstillers, wond problemen/Infecties), pijnscore, neurologische scores, mortaliteit, Henderson-classificatie, (in)continentie.

\*Chirurgie X versus Y= anterieure- versus posterieure benadering, piecemeal resectie versus en block resectie

#### **Table [x]: Selection criteria**

Patient population	Patients with spinal metastases.
Intervention	Included are surgical interventions using either an anterior or posterior approach to perform either an en-block or a piecemeal resection.
Outcome	mobility (walking in length/distance), morbidity (wound problems/infections), pain (dexamethason use, painkillers, pain score), neurological scores, mortality, Survival, Physical functioning (energy), Henderson-classification, (in)continence
Data presentation	Data about either an anterior and a posterior surgical group or an en-bloc or piecemeal resection
Language	Publications in English Language were included
Study designs	All prospective study designs with concurrent control groups (Systematic reviews, RCT, CCT, prospective cohort, retrospective cohorts)
Publication date	Studies published between 2003 and February 2014
Publication status	Full text, peer reviewed

#### *Golden hits*

*We hadden 3 golden hits, maar die zijn uiteindelijk niet geselecteerd.*

1. Fehlings MG, David KS, Vialle L, Vialle, E, Setzet M, Vrionis F. Decision Making in the Surgical Treatment of Cervical Spine Metastases. Spine (2009) ;34:22S. S108-S117

This systematic review was designed to answer 2 primary research questions that were determined through consensus among a panel of experts drawn from the Spine Oncology Study Group:

1. Is the decision to operate influenced by the anatomic region of the cervical spine?
2. Is the operative approach influenced by the anatomic region of the cervical spine?

2. Choi D, Crockard A, Bungler C, Harms J, Kawahara N, Mazel C, Melcher R, Tomita K. Review of metastatic spine tumour classification and indications for surgery: the consensus statement of the Global Spine Tumour Study Group. Eur Spine J (2010) 19:215-222.

The purpose of this article is to review the present systems available for classifying spinal metastases,

how these classifications can be used to help surgical planning, discuss surgical outcomes, and make suggestions for future research.

3. Chong S, Shin SH, Yoo H, Lee SH, Kim KJ, Jahng TA, Gwak HS. Single-stage posterior decompression and stabilization for metastasis of the thoracic spine: prognostic factors for functional outcome and patients' survival. *The Spine Journal* 12 (2012) 1083-1092.

A consecutive series of 105 patients, who underwent the previously stated surgery for metastatic spinal cord compression (MSCC) of thoracic spine, were included and retrospectively analyzed.

#### Search strategy

##### PubMed

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?otool=leiden>

("Spine"[mesh] OR "spine"[tw] OR "spinal"[tw] OR ("Cervical"[tw] AND (vertebrae OR spine[tw])) OR "Atlas"[tw]

OR "Coccyx"[tw] OR "Intervertebral Disc"[tw] OR "Intervertebral Discs"[tw] OR "Intervertebral Disk"[tw] OR

"Intervertebral Disks"[tw] OR "Lumbar Vertebrae"[tw] OR "Sacrum"[tw] OR "Spinal Canal"[tw] OR "Epidural

Space"[tw] OR "Thoracic Vertebrae"[tw] OR "Odontoid"[tw] OR "Spinal cord"[mesh] OR "Spinal Cord"[tiab]

OR "Spinal Cords"[ tiab] OR "Anterior Horn"[ tiab] OR "Extrapyramidal Tracts"[ tiab] OR "Posterior Horn "[ tiab]

OR "Substantia Gelatinosa"[ tiab] OR "Pyramidal Tracts"[ tiab] OR "Pyramidal Tract"[ tiab] OR "Spinothalamic

Tracts"[tiab] OR "Spinothalamic Tract"[ tiab] OR "vertebrae"[tw] OR "vertebral"[tw] OR "Spinal Cord Compression

"[Mesh] OR "Fractures, Compression"[Mesh] OR "VCF" [tiab])

((spine OR spinal) AND ("Neoplasm Metastasis"[mesh] OR "metastasis"[tw] OR "metastases"[tw] OR "metastatic" [tw] OR metastat\*[tw] OR metastas\*[tw] OR "Neoplasm Seeding"[tw] OR "neoplasm seeding

"[Mesh])) AND ("surgery"[Subheading] OR "surgery"[All Fields] OR "surgical procedures, operative"[mesh] OR

"surgical"[All Fields] OR "surgically"[All Fields] OR "neurosurgery"[All Fields] OR "neurosurgical"[All Fields])

AND 2003:2014[dp] AND ("Epidemiologic Studies"[Mesh] OR Clinical Trial[ptyp] OR "Comparative Study"

[Publication Type] OR "randomised" OR "randomized" OR "RCT" OR "clinical trial" OR "clinical trials" OR

"comparative study" OR "comparative studies" OR "retrospective study" OR "retrospective studies" OR

"prospective study" OR "prospective studies")

Limits English, humans

##### EMBASE

<http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=main&MODE=ovid&D=oemezd>

(spinal cordmetastasis/ OR spinemetastasis/ OR "spinal metastases".mpOR "spinal metastasis".mpOR

"spine metastasis".mpOR "spine metastases".mpOR "metastatic spine".mpOR "metastatic spinal disease".

mpOR

"metastaticspinalcord".mp OR "spinalcordmetastases".mpOR "spinalcordmetastasis".mpOR "cervical metastasis".mpOR "cervical metastases".mp

OR "vertebral metastasis".mpOR "vertebral metastases".mp

OR "lumbar metastasis".mpOR "lumbar metastases".mpOR ((exp \*Spine/ OR "spine".ti OR "spinal column".ti

OR "spinal".ti OR "Cervical Vertebrae".ti OR "Cervical Atlas".ti OR "Coccyx".ti OR "Intervertebral Disc".ti OR

"Intervertebral Discs".ti OR "Intervertebral Disk".ti OR "Intervertebral Disks".ti OR "Lumbar Vertebrae".ti OR

"Sacrum".ti OR "Spinal Canal".ti OR "Epidural Space".ti OR "Thoracic Vertebrae".ti OR "Odontoid".ti OR exp

\*Spinal cord/ OR "Spinal Cord".ti OR "Spinal Cords".ti OR "Anterior Horn Cells".ti OR "Anterior Horn Cell".ti  
 OR "Extrapyramidal Tracts".ti OR "Posterior Horn Cells".ti OR "Substantia Gelatinosa".ti OR  
 "Pyramidal  
 Tracts".ti OR "Pyramidal Tract".ti OR "Spinothalamic Tracts".ti OR "Spinothalamic Tract".ti OR  
 "vertebrae".ti  
 OR "vertebral".ti)AND (exp \*Metastasis/ OR "metastasis".ti OR "metastases".ti OR "metastatic".ti OR  
 metastat\*.ti OR metastas\*.ti OR "Neoplasm Seeding".ti))) AND (exp \*surgery/ OR surgery.mp OR  
 surgical.mp  
 OR surgically.mp OR neurosurgery.mp OR neurosurgical.mp)  
 (spinal cordmetastasis/ OR spinemetastasis/ OR "spinal metastases".mpOR "spinal  
 metastasis".mpOR  
 "spine metastasis".mpOR "spine metastases".mpOR "metastatic spine".mpOR "metastatic spinal  
 disease".  
 mpOR  
 "metastaticspinalcord".mp OR "spinalcordmetastases".mpOR "spinalcordmetastasis".mpOR "cervical  
 metastasis".mpOR "cervical metastases".mp  
 OR "vertebral metastasis".mpOR "vertebral metastases".mp  
 OR"lumbar metastasis".mpOR "lumbar metastases".mp) AND (exp \*surgery/ OR surgery.mp OR  
 surgical.mp  
 OR surgically.mp OR neurosurgery.mp OR neurosurgical.mp) AND ("Epidemiologic Studies".mp OR  
 "Clinical  
 Trial".mp OR "Comparative Study".mp OR "randomised".mp OR "randomized".mp OR "RCT".mp OR  
 "clinical  
 trial".mp OR "clinical trials".mp OR "comparative study".mp OR "comparative studies".mp OR  
 "retrospective  
 study".mp OR "retrospective studies".mp OR "prospective study".mp OR "prospective studies".mp)  
 limit to (human and embase and yr="2003 -Current" and (article or journal))  
 limit to english language

#### Web of Science

<http://isiknowledge.com/wos>

TS=(Spine OR "spinal") AND TS=(Metastasis OR "metastasis" OR "metastases" OR "metastatic" OR  
 metastat\* OR metastas\* OR "Neoplasm Seeding") AND TS=(surgery OR surgical OR surgically OR  
 neurosurgery OR neurosurgical) AND TS= ("Epidemiologic Studies" OR "Clinical Trial" OR  
 "Comparative  
 Study" OR "randomised" OR "randomized" OR "RCT" OR "clinical trial" OR "clinical trials" OR  
 "comparative  
 study" OR  
 "comparative studies" OR "retrospective study" OR "retrospective studies" OR "prospective study" OR  
 "prospective studies")  
 LIMITS: English, article, 2003-2014

#### Cochrane (Trials)

<http://www.thecochranelibrary.com/view/0/index.html>

(Spine OR "spinal" OR "Coccyx" OR "Intervertebral" OR "Sacrum" OR "sacral" OR "lumbar" OR  
 "cervical"  
 OR "thoracic" OR "Epidural" OR "Odontoid" OR "Spinal Cord" OR "Spinal Cords" OR "Anterior Horn"  
 OR  
 "Extrapyramidal Tracts" OR "Posterior Horn" OR "Substantia Gelatinosa" OR "Pyramidal Tracts" OR  
 "Pyramidal Tract" OR "Spinothalamic Tracts" OR "Spinothalamic Tract" OR "vertebrae" OR  
 "vertebral") AND  
 (Metastasis OR "metastasis" OR "metastases" OR "metastatic" OR metastat\* OR metastas\* OR  
 "Neoplasm Seeding") AND (surgery OR surgical OR surgically OR neurosurgery OR neurosurgical)  
 Limits 2003-nu, trials

#### Search results

Pubmed	791
Web of Science	183 (69 Uniek)
Trials (Cochrane)	185 (149 Uniek)
EMBASE	481 (272 Uniek)
Total	1640
Duplicates	- 388

Non English	- 19
Unique references	1253

*Included results*

1 review

2 prospective studies

6 retrospective studies