

Anesthésie - Divers

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Evaluation of early-death predictive factors and assessment of the benefits-risks ratio among patients with vertebral metastasis surgery indication.

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Position du problème et objectif(s) de l'étude:

Preoperative survival prognostication is the main factor to consider in order to select patients who will benefit from metastatic spine surgery. However current prognostic scores suffer from suboptimal accuracy that can lead to poor decisions and outcomes. Since patients selection for surgery is not fully standardised, we aim to identify clinical, oncological and biological markers associated with mortality at 3 and 6 months after surgery and evaluate their weight in the benefit-risk balance.

Matériel et méthodes:

A retrospective analysis was conducted in 105 patients referred consecutively to a specialized center for surgery of spinal metastasis because of neurologic impairment, uncontrolled pain or radiographic evidence of spinal instability between October 2020 and January 2022. Pre-operative clinical, oncological, biological data were extracted from their medical records. Survival, neurologic outcome and pain relief were assessed after at least 6 month after surgery by phone interview to the patient's general practitioner or if needed the patient himself. Kaplan-Meier curves were plotted to estimate overall survival. Univariate and multivariate analysis were performed to assess the relation between survival and the explanatory variables.

The study was approved by the University Hospital of Bordeaux Ethics Committee. In accordance to the European Guideline of Data Protection an information letter was sent to all survivors explaining the study and their opposition rights.

Résultats & Discussion:

105 patients were included, median follow-up time was 11 months. One third of patients died within 6 months. Multivariate survival analysis identified age, Karnofsky score, hyperalgy and CRP as independently associated with shorter survival. Patients with high CRP values above 100mg/L had 57% mortality rate at 3 months. CRP cut-off point was set at 10mg/ml in most studies, the results of subgroups analysis of different CRP thresholds suggest that higher cut-off could better stratify mortality risk. Hyperalgetic patients had higher mortality rate at 3 month (35% vs 17% OR = 2.68 ; CI[1.05 ; 6.85] ; p=0.047) and strong opioid use before surgery was significantly associated with a lower rate of pain relief (50% versus 73.7%, OR = 0.36 ; CI[0.14 ; 0.89] ; p=0.042). However pre-operative neurological deficit did not impact survival prognosis (6 month mortality rates 33.33% vs 30.43% OR = 0.88 ; CI[0.38 ; 2.02] ; p=0.92) and was fully corrected by surgery in half cases (49%).

Conclusion:

Including biological markers of inflammation in pre-operative multidisciplinary discussion could improve proper patient selection for surgery. Also incomplete neurological deficit should weight in the benefit risk balance in favor of surgery contrarily to hyperalgetic presentation. In the lights of these new clinical and biological markers for short term postoperative survival new studies are needed to develop accurate prognosis models to help clinicians decision.

Références bibliographiques:

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| | Hazard ratio [95% CI] | P value |
|--|-----------------------------|------------------|
| Age (Risk for each 1-unit increase) | 1.09 [1.04 ; 1.14] | <0.001 |
| ASA score (3-4 vs 2) | 1.69 [0.745 ; 3.84] | 0.209 |
| Karnofsky (Risk for each 1-unit increase) | 0.956 [0.93 ; 0.984] | <0.01 |
| Breast primitive | 1.9 [0.569, 6.35] | 0.297 |
| Visceral metastasis | 1.05 [0.454, 2.45] | 0.902 |
| Hyperalgy | 3.08 [1.41, 6.76] | <0.01 |
| CRP (Risk for each 1-unit increase) | 1.02 [1.01 ; 1.03] | <0.001 |
| Albumin (Risk for each 1-unit increase) | 1.09 [0.991 ; 1.2] | 0.0754 |

Table 1. Multivariate overall survival analysis

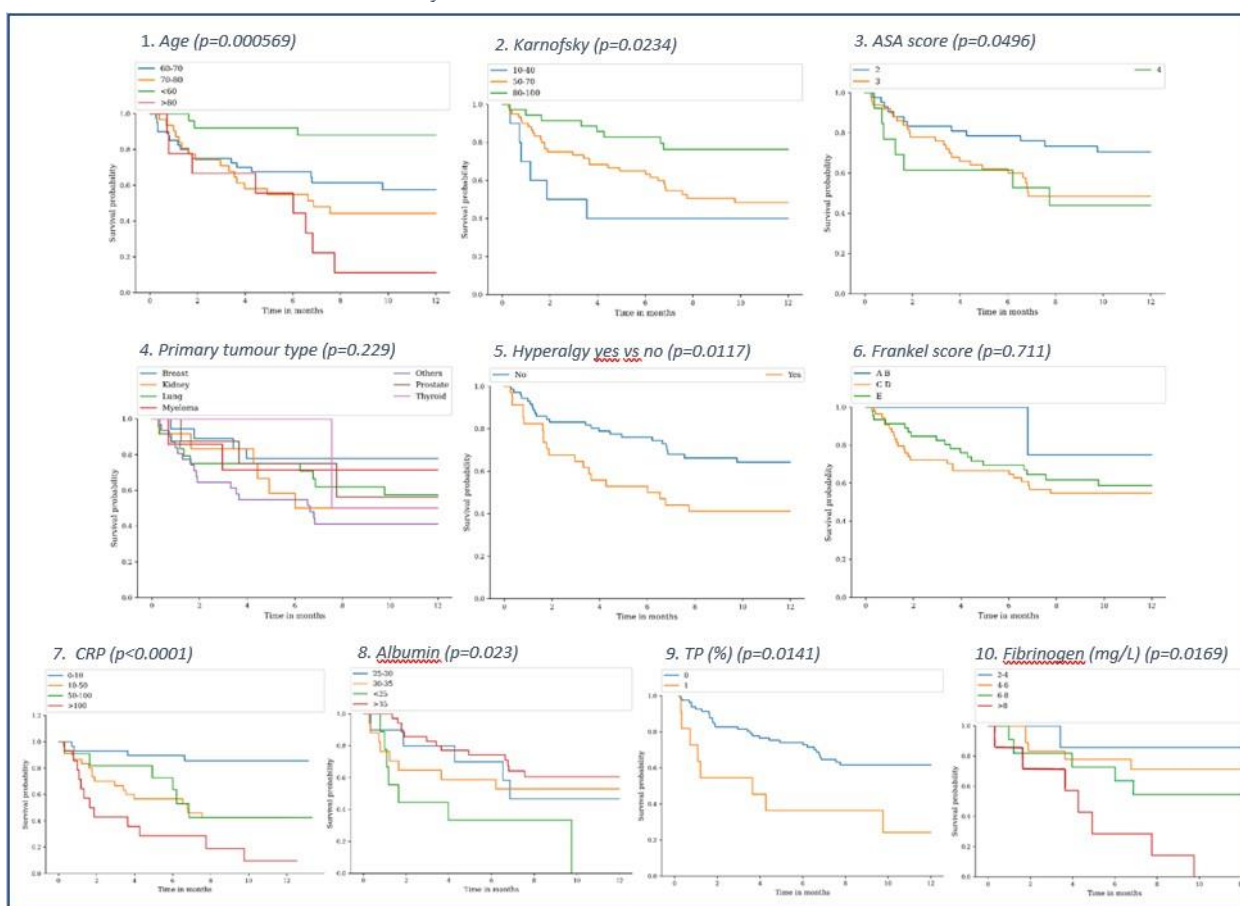


Figure 2. Survival curves according to general, oncological, clinical and biological parameters

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