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652.Multiple Myeloma: Clinical and Epidemiological

Efficacy and Prognostic Analysis of Percutaneous Vertebroplasty/Kyphoplasty in Patients with Newly Diagnosed Multiple MyelomaFujing Zhang¹, Shuzhong Liu, MD², Xi Zhou, MD², Shuangjiao Liu¹, Yong Liu, MDPHD², Junling Zhuang, MDPHD¹¹Department of Hematology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China²Department of Orthopedic, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China

Objective To evaluate the efficacy and prognosis of percutaneous vertebroplasty/ kyphoplasty (PVP/PKP) in patients with newly diagnosed multiple myeloma (NDMM).

Methods Clinical data of NDMM patients who underwent PVP/PKP during front-line regimen at Peking Union Medical College Hospital from January 1 2003 to June 30, 2023, were retrospectively analyzed. Patients with comparable severity of bone disease and no orthopedic surgery were selected as controls. Visual analogue scale (VAS) score, progression-free survival (PFS), and overall survival (OS) were compared. Statistical methods mainly adopt χ^2 -test, t-test, Kaplan Meier, and COX regression analysis.

Results Baseline characteristics were matched between the surgical group (n=51 with 56 surgeries) and non-surgical group(n=102), including gender, age, paraprotein type, serum M protein level, International Staging System(ISS), numbers of lytic lesions, cytogenetic abnormalities, first-line treatment, and autologous stem-cell transplantation (ASCT)($P>0.05$). Bone lesions for PVP/PKP were located at thoracic vertebrae (53.6%, 30/56) or lumbosacral vertebrae (46.4%, 26/56). The postoperative VAS score was significantly improved (2.25 ± 0.81 vs 5.92 ± 1.05 , $P<0.001$). The median follow-up time was 51[38,70] months. Kaplan-Meier survival analysis suggested that PFS (37[17,89] vs 23[12.61] months, HR 0.648, 95%CI 0.431-0.973, $P=0.047$) and OS (not reached vs 66[28, NR] months, HR 0.519, 95%CI 0.296-0.910, $P=0.045$) in the surgical group were significantly improved. COX multivariate analysis suggested that PVP/PKP was an independent prognostic factor for PFS ($P=0.021$, HR 0.589,95%CI 0.376-0.922)and OS($P=0.038$, HR 0.496,95%CI 0.255-0.963), while not receiving ASCT or ISS stage II/III were independent risk factors. Subgroup analysis confirmed that patients with ISS II/III or non-ASCT achieved better PFS and OS in the surgical group(PFS: $P=0.033$, $P=0.040$; OS: $P=0.024$, $P=0.018$), while patients with ISS I or receiving ASCT had similar survival outcome(PFS $P>0.05$; OS $P>0.05$) between two groups.

Conclusion For NDMM patients, PVP/PKP is associated better quality of life due to alleviating bone pain. Meanwhile, it improves the PFS and OS of patients with ISS stage II/III or non-transplant eligible, which suggests that shortening the gap from symptom onset to diagnosis by surgical pathology will improve response in MM.

Disclosures No relevant conflicts of interest to declare.

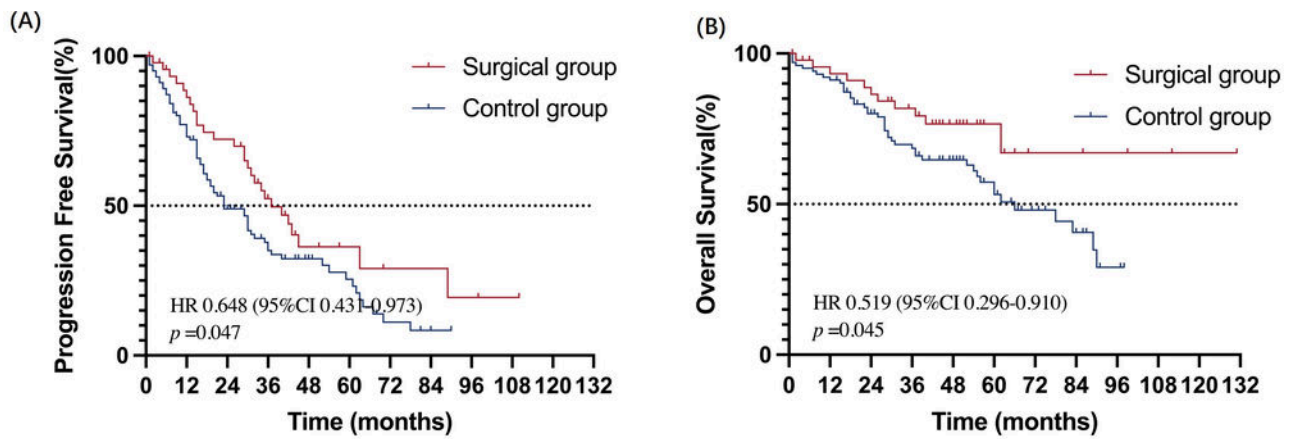


Figure: Kaplan-Meier Survival Plots
 (A) Progression-free Survival in patients with multiple myeloma stratified by percutaneous vertebroplasty/kyphoplasty experiences. Median PFS was 37months for the surgical group, while it was 23 months for the control. (B) Overall Survival in patients with multiple myeloma stratified by percutaneous vertebroplasty/kyphoplasty experiences. Median OS was not reached for the surgical group, while it was 66 months for the control. HR: hazard ratio.

Figure 1

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