

# Prognostic Significance of Karyopherin Alpha 2 for Patients with Colorectal Cancer: A Review

Jeremiah Hilkih Wijaya<sup>1</sup>, Alexa Ovilia Tan<sup>1</sup>,

<sup>1</sup>Faculty of Medicine, Pelita Harapan University, Tangerang, Indonesia

<sup>2</sup>Department of Internal Medicine Faculty of Medicine, Pelita Harapan University, Tangerang, Indonesia



## BACKGROUND

Karyopherin (KPNA) is a nuclear transport protein that interacts with cellular cargo through a nuclear localization signal. The cellular transport system is frequently dysfunctional in cancer cells. KPNA2, a subset of KPNA family, is expressed at high levels in a range of cancers, including breast and lung cancers. However, just a few research have looked into KPNA2 expression in colorectal cancer (CRC). This systematic review and meta-analysis aimed to determine the prognostic significance of KPNA2 for patients with CRC.

## RESULTS AND DISCUSSION

From a total of 3,013 studies retrieved, we identified four unique studies comprising of 910 samples biopsied. High KPNA2 level was expressed in 459 patients, whereas the remaining 451 had low expression. From meta-analysis, we found that KPNA2 was not associated with DFS (HR 1.72 [1.27, 2.32];  $p=0.98$ ;  $I^2 = 0\%$ ) and OS (HR 1.78 [1.43, 2.23];  $p=0.59$ ;  $I^2 = 0\%$ ). After all, the fitted studies are good in quality.

## METHODS

Two authors performed an independent English full-text literature search on KPNA2 and CRC sourcing from PubMed, EuroPMC, and the Cochrane Library (keywords: KPNA2, karyopherin alpha 2, prognosis, outcome, colorectal cancer, colon cancer, rectal cancer, and neoplasm). Primary outcomes include disease-free survival (DFS) and overall survival (OS). All types of study design considered suitable, except non-primary publications (grey and white literature), non-human studies, and studies with a population < 18 years of age. High KPNA2 expression referred to the final score obtained for the product of the intensity score and the percentage score with a cutoff value of 4 points. We used the Hazard Ratio (HR) to analyze it and report it as HR with a 95% confidence interval (CI). The random-effects model was employed to analyze the data. The Newcastle Ottawa Scale was used to assess the overall quality of evidence in all of the studies examined (NOS).

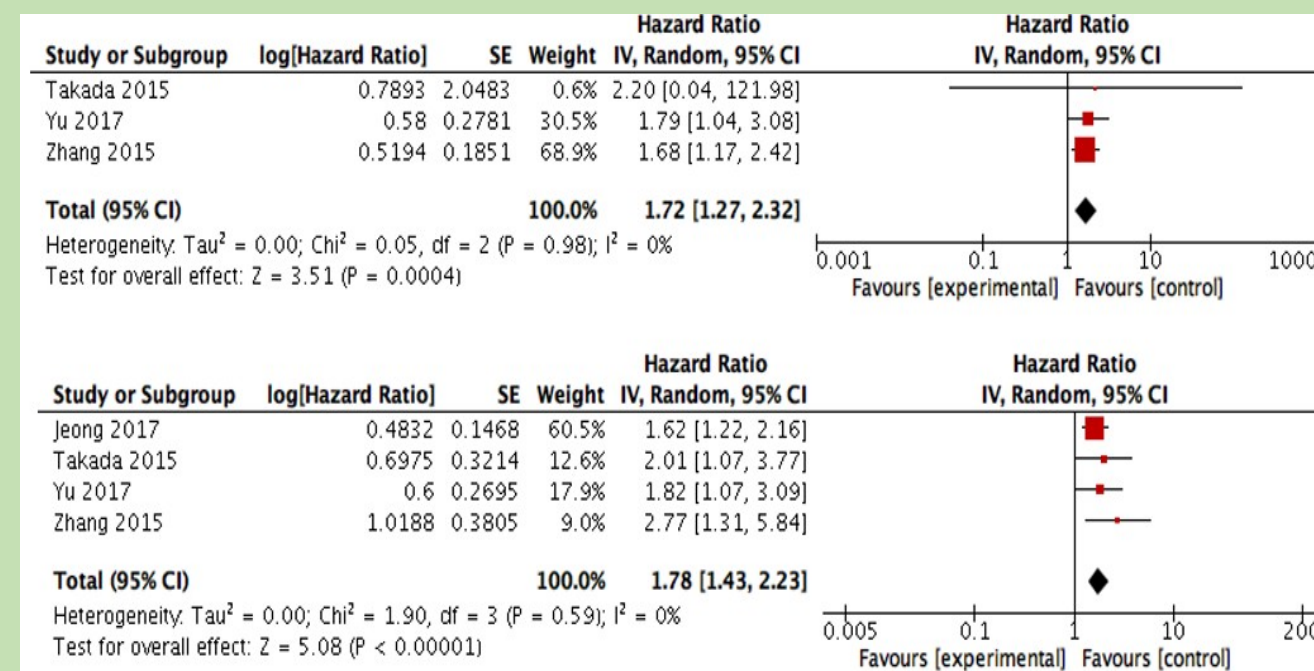


Fig 2. Forest plot for a) disease free survival and b) overall survival

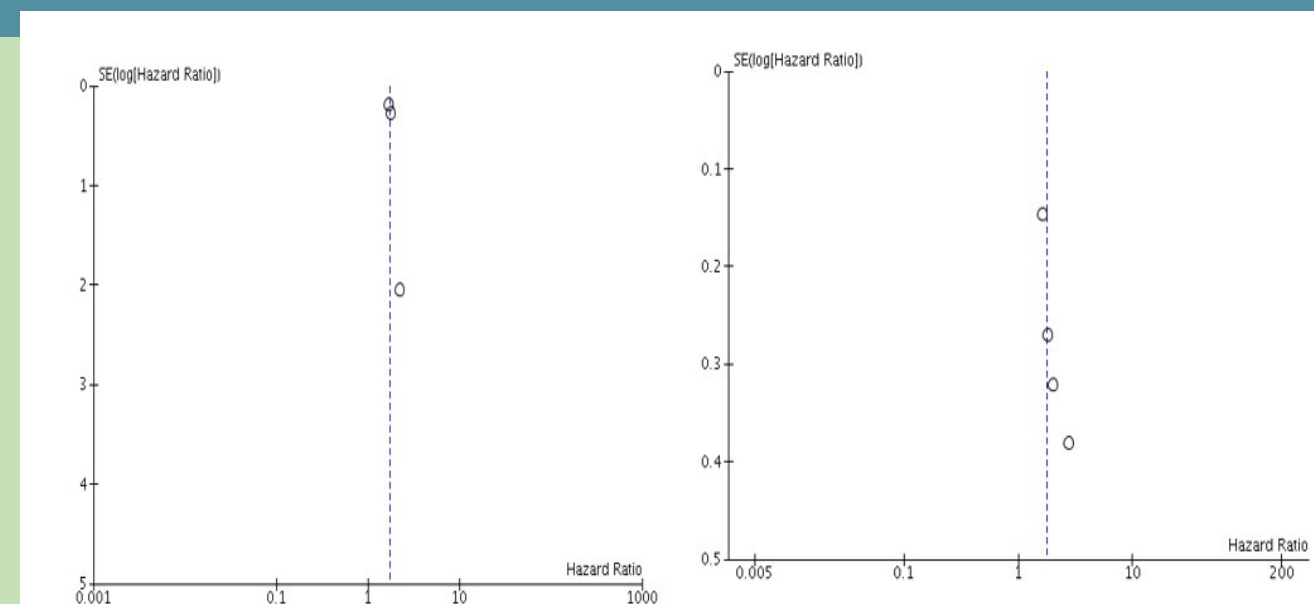
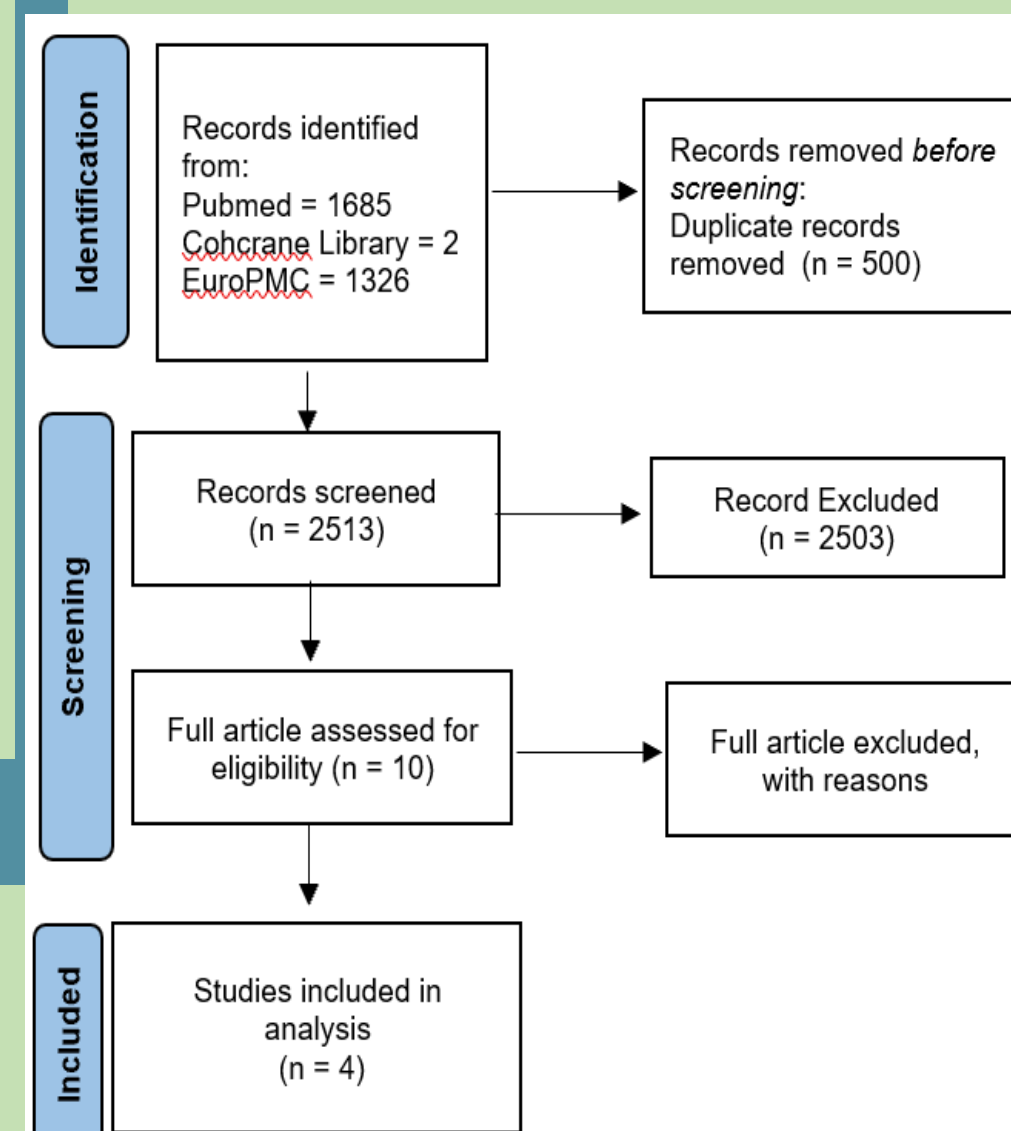


Fig 1. Funnel plot for a) disease free survival and b) overall survival



## CONCLUSION

This study demonstrated that KPNA2 was not associated with disease-free survival and overall survival rate.

Correspondences  
jeremiah.hansum6@gmail.com

Conflict of Interest

None