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

Karyopherin (KPN) 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. KPN2, a subset of KPN family, is expressed at high levels in a range of cancers, including breast and lung cancers. However, just a few research have looked into KPN2 expression in colorectal cancer (CRC). This systematic review and meta-analysis aimed to determine the prognostic significance of KPN2 for patients with CRC.

METHODS

Two authors performed an independent English full-text literature search on KPN2 and CRC sourcing from PubMed, EuroPMC, and the Cochrane Library (keywords: KPN2, 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 KPN2 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).

RESULTS AND DISCUSSION

From a total of 3,013 studies retrieved, we identified four unique studies compromising of 910 samples biopsied. High KPN2 level was expressed in 459 patients, whereas the remaining 451 had low expression. From meta-analysis, we found that KPN2 was not associated with DFS (HR 1.72 [1.27, 2.32]; p=0.98); I² = 0% and OS (HR 1.78 [1.43, 2.23]; p=0.59); I² = 0%). After all, the fitted studies are good in quality.

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

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

CONCLUSION

This study demonstrated that KPN2 was not associated with disease-free survival and overall survival rate.

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Conflict of Interest
None