INPLASY

Prognostic value of programmed death ligand 1 (PD-L1) expression in patients with anal cancer: a meta-analysis

INPLASY202420048
doi: 10.37766/inplasy2024.2.0048
Received: 10 February 2024
Published: 10 February 2024

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420048

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 February 2024 and was last updated on 10 February 2024.

INTRODUCTION

Review question / Objective Programmed cell death ligand 1 (PD-L1) level predicts the dismal prognostic outcome of different solid tumors. Nonetheless, its prognostic value in patients with anal cancer (AC) is inconsistent and even controversial. To evaluate prognostic and clinicopathological significance of PD-L1 for AC, a meta-analysis was performed.

Condition being studied Prognostic value of programmed death ligand 1 (PD-L1) expression in patients with anal cancer. The hazard ratios (HRs) and 95% confidence intervals (CIs) of overall survival (OS) and progression-free survival (PFS) in line with PD-L1 expression were determined.

METHODS

Search strategy PubMed, Embase, Web of Science, and Cochrane Library databases were thoroughly searched between their inception and July 4, 2023 based on the following search strategies (PD-L1 or B7-H1 or CD274 or programmed cell death ligand 1 or PDL1 or programmed cell death-ligand 1 or B7 homolog 1 or cluster of differentiation 274 or programmed cell death 1 ligand 1 protein) and (anal cancer or anal carcinoma). The study language was restricted to English. Additionally, we also analyzed references and citations in relevant publications for identifying further relevant studies.

Participant or population AC patients was pathologically diagnosed based on immunohistochemistry (IHC).

Intervention Relation of PD-L1 with any survival outcome like OS or progression-free survival (PFS) was investigated.

Comparator AC patients with low expression of PD-L1.

Study designs to be included Cohort studies, including prospective and retrospective cohorts published in English.

Eligibility criteria Studies conforming to following criteria were presented as follows: (1) AC was pathologically diagnosed based on immunohistochemistry (IHC); (2) relation of PD-L1 with any survival outcome like OS or progression-free survival (PFS) was investigated; (3) the hazard ratios (HRs) and 95% confidence intervals (CIs) were available or calculable by given data; (4) the threshold was identified to stratify high/low PD-L1 expression; and (5) English studies. Studies below were excluded: (1) meeting abstracts, reviews, letters, case reports, as well as comments; (2) animal studies; and (3) duplicate literature.

Information sources PubMed, Embase, Web of Science, and Cochrane Library databases were thoroughly searched between their inception and July 4, 2023. Additionally, we also analyzed references and citations in relevant publications for identifying further relevant studies.

Main outcome(s) OS and PFS.

Quality assessment / Risk of bias analysis Subgroup analysis was carried out to identify the heterogeneity source. Additionally, a single study was excluded each time in sensitivity analysis for determining whether effect values changed significantly. Publication bias was examined with Begg's funnel plot and Egger's test.

Strategy of data synthesis Pooled HRs and 95%CIs were calculated to assess the prognostic role of PD-L1 for OS and PFS in AC. Cochran's Q test and Higgins I2 statistic were used to evaluate inter-study heterogeneity. The I2>50% and/or P<0.10 represented obvious heterogeneity, so a random-effects model should be used to analyze the combined effect estimates; or else, a fixed-effects model should be adopted. Subgroup analysis was carried out to identify the heterogeneity source.

Subgroup analysis Subgroup analysis was carried out to identify the heterogeneity source.

Sensitivity analysis Additionally, a single study was excluded each time in sensitivity analysis for determining whether effect values changed significantly.

Language restriction English.

Country(ies) involved China.

Keywords PD-L1; meta-analysis; anal cancer; prognosis; clinical practice.

Contributions of each author

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