

Distinct Prognostic Role of ALK Fusion in Early- and Advanced-stage Lung Adenocarcinoma

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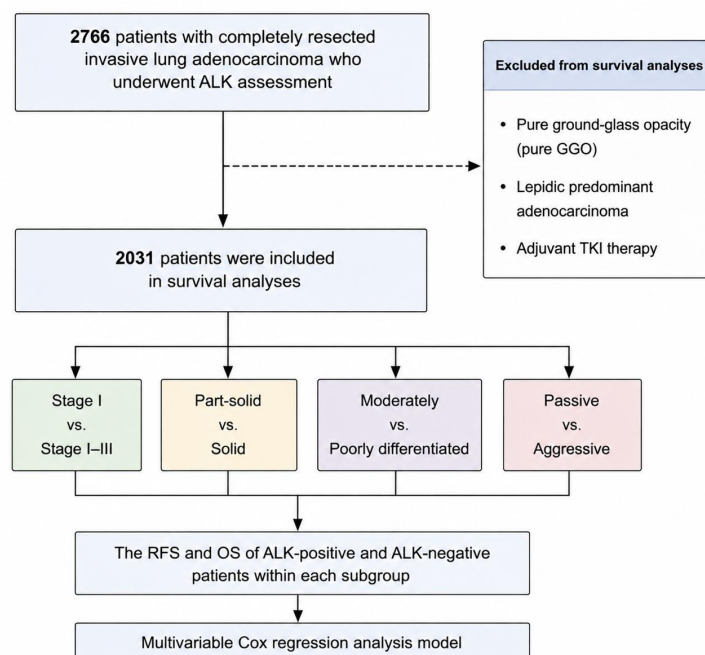
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OBJECTIVE

ALK fusion is an established therapeutic target, but its untreated prognostic impact across tumor progression remains uncertain. We evaluated resected invasive lung adenocarcinoma by stage, radiologic pattern, histologic differentiation and pathologic aggressiveness.

METHODS

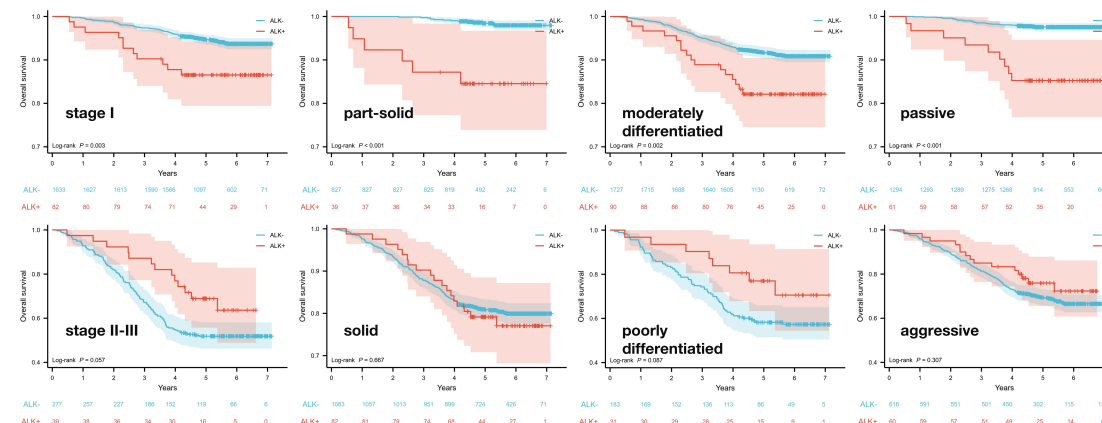
Retrospective cohort of patients undergoing complete resection and ALK testing (2018–2020). ALK-positive and ALK-negative outcomes were compared within prespecified subgroups. Endpoints: recurrence-free survival (RFS) and overall survival (OS); multivariable Cox regression assessed independent prognostic factors.



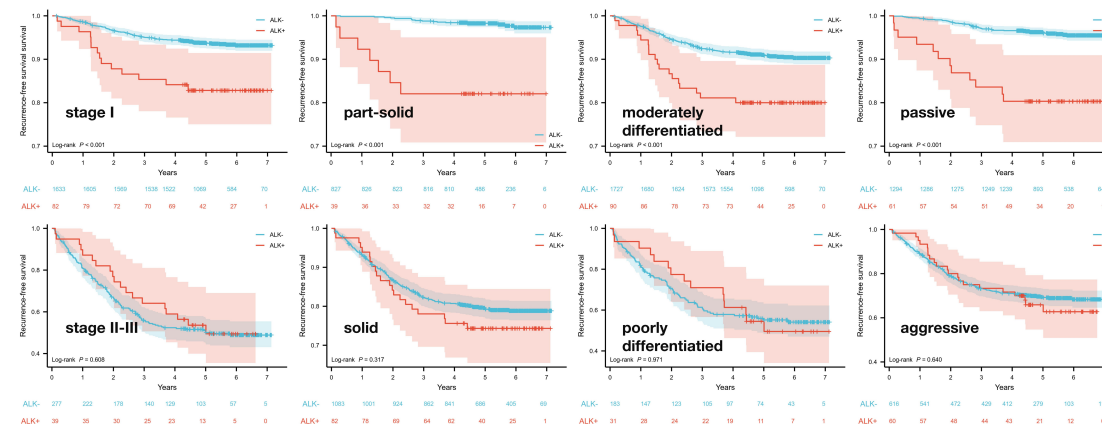
RESULTS: STAGE-DEPENDENT ALK PROGNOSIS

ALK fusion independently predicted prognosis in stage I, part-solid and pathologically passive subgroups. Furthermore, ALK fusion was demonstrated as an independent prognostic factor in these subgroups by Cox regression.

Overall survival



Recurrence-free survival

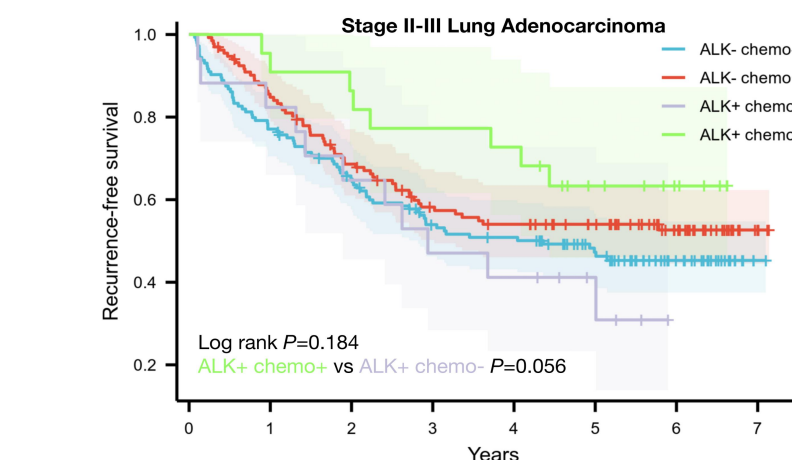


Key result

The independent prognostic value of ALK fusion was evident in early-stage LUAD but diminished as tumors progressed.

CLINICAL IMPLICATION

In stage II–III disease, adjuvant chemotherapy independently improved RFS among ALK-positive patients, but not among ALK-negative patients.



ALK- chemo-	144	111	90	70	65	48	24	1
ALK- chemo+	133	111	88	70	64	55	33	4
ALK+ chemo-	17	14	11	8	7	4	0	0
ALK+ chemo+	22	21	19	17	16	9	5	0

CONCLUSIONS

• The adverse prognostic value of ALK fusion is strongest in early-stage, less aggressive LUAD and diminishes with tumor progression.

• ALK positivity may identify stage II–III patients deriving greater benefit from postoperative adjuvant chemotherapy.