2021 ESMO congress

1760MO

Impact of immune checkpoint blockade therapy according to CD274 copy number alterations: A retrospective study in the ProfiLER cohort

K. Hodroj[1], P-E. Heudel[2], M. Fonnesu[3], A. Karabajakian[2], V.K. Attignon[4], O. Tredan[2], T. Filleron[5], I.J. Garberis[6], M. Jimenez[7], F. André[8], T. Bachelot[2]

[1] Centre Léon Berard, Lyon, France, [2] Medical Oncology, Centre Léon Bérard, Lyon, France, [3] Department of Biostatistics, Centre Léon Bérard, Lyon, France, [4] Translational Research Department, Centre Léon Bérard, Lyon, France, [5] Haute Garonne, Centre Claudius-Regaud, Toulouse, France, [6] Medical Oncology, Institut Gustave Roussy, Villejuif, France, [7] R&D Department, Unicancer, Paris, France[8] Breast Cancer Unit, Medical Oncology Department, Gustave Roussy - Cancer Campus, Villejuif, France

Background

Immune checkpoint therapy has led to important clinical advances in cancer treatment. Effectiveness of blocking the PD-L1/PD-1 signaling pathway was first correlated to PD-L1 expression with a predictive power that varies substantially between studies. Exploratory analyses of the SAFIR02-Breast study identified *CD274* (*PD-L1* gene) gain/amplification as a potential predictive biomarker for immune checkpoint blockade drugs (ICBDs) response in triple negative breast cancer patients. In order to determine if *CD274* gain/amplification could be an agnostic predictive biomarker, we collected *CD274* copy number alterations (CNA) and ICBDs treatment status in the ProfiLER cohort.

Methods

Among the 2962 patients included in the ProfiLER cohort, we selected (i) the subgroup of 285 patients whose tumour had *CD274* amplification/gain and (ii) the subgroup of 144 who received ICBD and for which we had the *CD274* copy number alteration (CNA) status. Then we assessed in the first group tumour evolution as a function of exposition to ICBD, and, in the second group, we compared clinical response to ICBD according to *CD274* CNA.

Results

In the 285 patients with *CD274* gain/amplification, median overall survival (OS) from metastatic relapse was 36.7 months in those who received ICBDs and 28 months in those who did not; hazard ratio (HR) 1.52, 95 % confidence interval (CI) [1.05-2.18], p=0.024. Among the 144 patients who did receive ICBD and for which we had the somatic *CD274* CNA status, median OS was 15.2 months in the *CD274* gain/amplification group compared with 9.7 months in the *CD274* normal/loss group; HR 0.63, 95% CI [0.42-0.95], p=0.026. In the most prevalent cohort; head and neck carcinoma (n = 90); median OS was 28.6 months in the *CD274* gain/amplification subgroup as compared with 9.1 months in the *CD274* normal/loss subgroup; HR 0.40, 95% CI [0.21-0.76], p=0.004.

Conclusions

In this retrospective study, *CD274* CNA gain/amplification is associated with OS improvement when patients are treated with ICBD. Further prospective studies are needed to confirm *CD274* gain/amplification as a predictive biomarker for ICBDs response.

Legal entity responsible for the study

Centre Léon Berard.

Funding

Has not received any funding.

Disclosure

P. Heudel: Non-Financial Interests, Other: Pfizer; Financial Interests, Research Grant: Novartis; Financial Interests, Research Grant: Roche; Non-Financial Interests, Other: Novartis; Financial Interests, Other: Mylan; Financial Interests, Other: Pierre Fabre; Financial Interests, Other: Seagen; Financial Interests, Other: Amgen; Non-Financial Interests, Other: AstraZeneca. O. Tredan: Financial Interests, Other, personal fees: Roche; Financial Interests, Other, personal fees: MSD-Merck; Financial Interests, Other, personal fees: AstraZeneca; Financial Interests, Other, personal fees: Pfizer; Financial Interests, Other, personal fees: Lilly; Financial Interests, Other, personal fees: Seagen; Financial Interests, Other, personal fees: Daiichi Sankyo; Financial Interests, Other, personal fees: Eisai; Financial Interests, Other, personal fees: Pierre Fabre; Financial Interests, Research Grant: Roche; Financial Interests, Research Grant: MSD-Merck; Financial Interests, Research Grant: BMS. T. Filleron:

Non-Financial Interests, Other, Consulting: Cellectics. F. André: Financial Interests, Invited Speaker, and research funding: Roche; Financial Interests, Invited Speaker, and research funding: AstraZeneca; Financial Interests, Invited Speaker, and research funding: Daiichi; Financial Interests, Invited Speaker, and research funding: Pfizer; Financial Interests, Invited Speaker, and research funding: Novartis; Financial Interests, Invited Speaker, and research funding: Lilly. T. Bachelot: Financial Interests, Invited Speaker, and research funding: Roche; Financial Interests, Invited Speaker, and research funding: Novartis; Financial Interests, Invited Speaker, and research funding: Pfizer; Financial Interests, Invited Speaker, and research funding: Seattle Genetic; Financial Interests, Invited Speaker, and research funding: Lilly; Financial Interests, Invited Speaker, and research funding: AstraZeneca. All other authors have declared no conflicts of interest.