VIRTUAL ESMO congress 2020

LBA3_PR

An international randomized trial, comparing post-operative conformal radiotherapy (PORT) to no PORT, in patients with completely resected non-small cell lung cancer (NSCLC) and mediastinal N2 involvement: Primary end-point analysis of LungART (IFCT-0503, UK NCRI, SAKK) NCT00410683

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Background

Adjuvant PORT has been controversial since publication of a meta-analysis showing PORT could be deleterious especially in pN0 pN1 pts. However, changes have taken place in the management of stage IIIAN2 NSCLC pts including use of adjuvant chemotherapy (CT), patients' workup, quality of surgery and radiotherapy. Therefore the role of PORT warranted further investigations in high risk pts.

Methods

LungART is a multi-institutional randomized phase III trial comparing mediastinal PORT (54 Gy/27-30 fractions) to no PORT. Pts were eligible if they were PS 0-2, had a complete resection with nodal exploration, proven N2 disease; prior (neo)-adjuvant CT was allowed. The main end-point was disease-free survival (DFS). 500 pts and 292 events were required to show an improvement in DFS from 30% to 42% with PORT (bilateral test). Secondary endpoints included toxicity, local control, patterns of recurrence, overall survival (OS), second cancers, prognostic and predictive factors of treatment effect.

Results

Between August 2007 and July 2018, 501 patients were randomized after surgery or after CT: 252 pts allocated to PORT, and 249 to CA. Median age was 61 (range=36-85), 66% male, histology: mostly adenocarcinoma (73%) and work-up included PET scan in 91% pts. Most patients received CT (post op 77%, pre-op 18%). Analysis for DFS was performed with a median FU of 4.8 yrs; toxicity evaluated on 487 pts (246 in CA). Early and late Gr 3-5 cardio-pulmonary toxicity was respectively 7 and 20% in PORT vs 3,2 and 7,7 % in CA. DFS hazard ratio was 0.85 (95% CI 0.67; 1.07); p=0.16; median DFS was 30.5 months in PORT arm [24;48] and 22.8 in CA [17;37]; 3-year DFS was 47.1% with PORT vs 43.8% with no PORT. 3-year OS was 66.5% with PORT vs 68.5% with no PORT.

Conclusions

LungART is the first European randomized study evaluating modern PORT after complete resection, in pts selected predominantly with PET scan and having received (neo)adjuvant CT. 3-year DFS was higher than expected in both arms and PORT was associated with a non-statistically significant 15% increase in DFS among stage IIIAN2 pts.

Clinical trial identification

NCT00410683.

Legal entity responsible for the study

Gustave Roussy.

Funding

French National Cancer Institute (INCa), French Health Ministry (PHRC), Gustave Roussy and CRUK grant (A13969).

Disclosure

C. Le Pechoux: Honoraria (institution): Amgen; Honoraria (institution), Advisory/Consultancy: AstraZeneca; Honoraria (institution): Lilly; Honoraria (self): PrimeOncology; Honoraria (institution): Medscape; Honoraria (institution), Advisory/Consultancy: Roche; Honoraria (institution), Advisory/Consultancy: Nanobiotix. F. Barlesi: Honoraria (self), Personal fees: AstraZeneca; Honoraria (self): Bayer; Honoraria (self): Bristol-Myers Squibb; Honoraria (self): Boehringer-Ingelheim; Honoraria (self): Eli Lilly Oncology; Honoraria (self): F. Hoffmann-La Roche Ltd.; Honoraria (self): Novartis; Honoraria (self): Merck; Honoraria (self): MSD; Honoraria (self): Pierre Fabre; Honoraria (self): Pfizer; Honoraria (self): Takeda. C. Faivre-Finn: Advisory/Consultancy, Research grant/Funding (institution): AstraZeneca; Research grant/Funding (institution): Elekta. G. Zalcman: Research grant/Funding (institution): Fondation Roche; Honoraria (self), Travel/Accommodation/Expenses: AstraZeneca; Honoraria (self), Travel/Accommodation/Expenses: BMS; Honoraria (self): MSD; Honoraria (self), Advisory/Consultancy: Inventiva; Travel/Accommodation/Expenses: Roche; Travel/Accommodation/Expenses: AbbVie; Travel/Accommodation/Expenses: Pfizer; Advisory/Consultancy: Da Volterra. J. Madelaine: Honoraria (self), Dr JM received support: AstraZeneca; Honoraria (self): Chugai Pharma; Honoraria (self): Pfizer; Honoraria (self): Boehringer Ingelheim; Honoraria (self): MSD France; Honoraria (self): Roche SAS; Honoraria (self): Actelion; Honoraria (self): GSK; Honoraria (self): Bristol-Myers Squibb. A. Bardet: Advisory/Consultancy: Roche. All other authors have declared no conflicts of interest.