MuTAR study – Phase II, open-label study of erlotinib treatment in patients with locally advanced or metastatic non-small cell lung cancer (NSCLCm) who present activating mutations in the tyrosine kinase (TK) domain of the epidermal growth factor receptor (EGFR) – final results.

Fernando Barata[1], Henrique Queiroga[2], Encarnação Teixeira[3], Teresa Almodovar[4], Barbara Parente[5], Marta Soares[6], Juan Carlos Melides[7], Ana Antunes[8].

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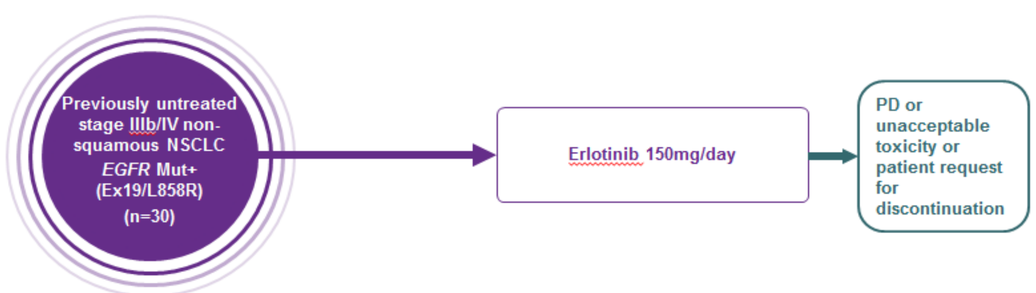
Mutations in *EGFR* are present in 10–26% of NSCLC and are associated with response to TK inhibitors. The EURTAC study, in which were included only non-asian patients, treated with erlotinib in first line has shown a median PFS of 9.7 months. The MuTAR study was undertook among a Portuguese population of NSCLC patients.

Study design



Local open-label, multi-centre phase II study, event-driven, sample size based on the primary variable of the study. Recruitment period between 04/01/11 and 31/03/12. The study ended when the last patient stopped erlotinib therapy and completed the last safety follow-up visit at 29 September 2017.

Primary objective: to evaluate the anti-tumoral activity of erlotinib through objective response rate (ORR)

Secondary objectives: Progression-free survival (PFS); EGFR mutation frequency; overall survival (OS); erlotinib safety profile; response duration.

Results:

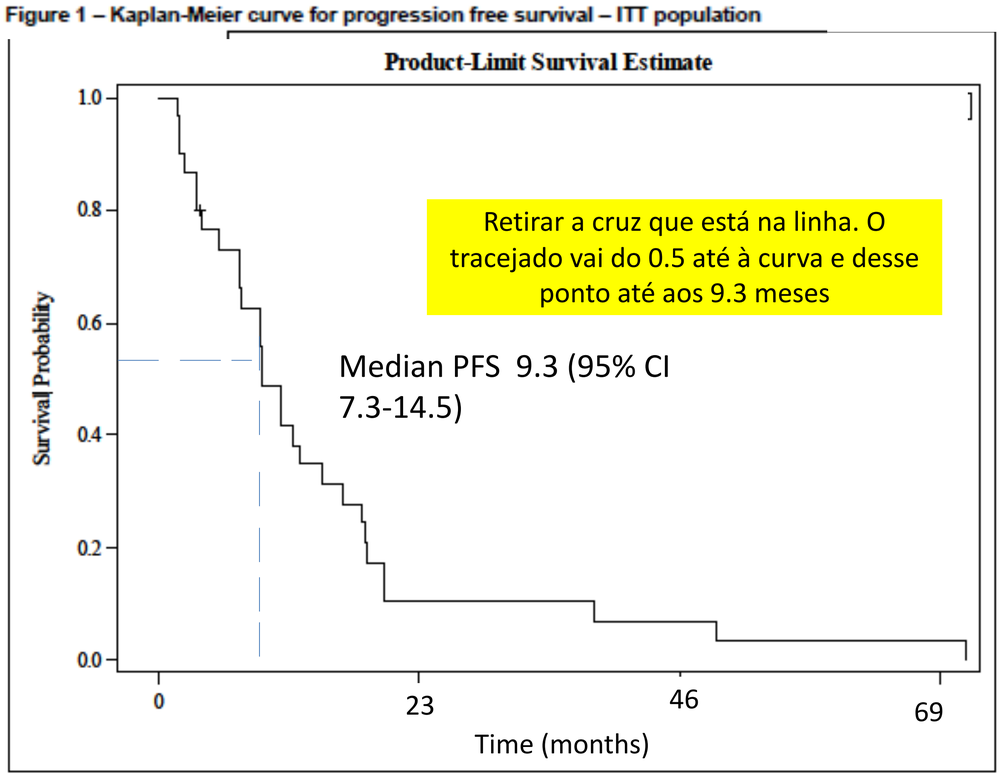
A total of 216 patients were screened, being 30 patients included. The EGFR test was performed in 205 of the screened patients, being positive (exon 19 or 21 mutations) for 18.5% of them (95%CI 13.2%-23.9%). Of these 38 positive results, 17 (44.7%) had exon 19 mutation and 21 (55.3%) had exon 21 mutation.

Table 1 – Clinical and demographic characteristics of ITT population	
Gender	n (%)
Male	6 (20)
Female	24 (80)
Age (years)	
Mean (±SD)	66.33(±9.21)
Smoking habits	n (%)
Non-smoker	23 (76.7)
Smoker	1 (3.3)
Ex-smoker	6 (20)
ECOG Performance Status	n (%)
0	6 (20)
1	20 (66.7)
2	4 (13.3)
EGFR mutation	n (%)
Exon 19	12 (40)
Exon 21	18 (60)

The median smoking duration was 20 years and the median number of cigarettes per day was 20.

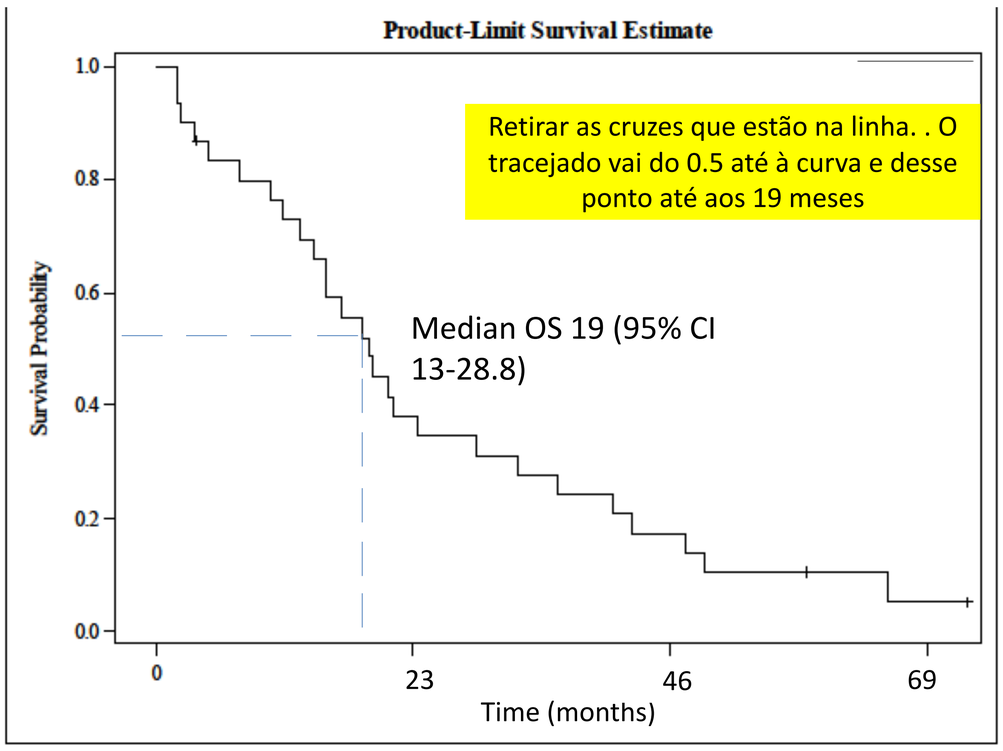
Table 2 – Best Overall Response by RECIST Criteria	
Best overall response	n (%)
Complete Response	0
Partial Response	19 (66.3)
Stable Disease	9 (30)
Progressive Disease	1 (3.3)
Not available/Not accessed	1 (3.3)
Objective Response Rate (ORR)	19 (66.3)
Disease Control Rate	28 (96.3)

Figure 1 – Kaplan-Meier curve for progression free survival – ITT population



The median PFS was 13 months (95%CI 4-38.5) for exon 19 patients and 9 months (95%CI 3.5-12.5) for exon 21 patients

Figure 2 – Kaplan-Meier curve for overall survival – ITT population



Almost all patients (n=29, 96.7%) had at least one adverse event . Fifty one percent of the adverse events were unrelated to the study drug . The majority (**77.1%**) of the adverse events were **grade 1 or grade 2** and 4.7% were grade ≥3 (4.4% grade 3 and 0.3% grade 4). In **90.9%** of the adverse events the **dose did not change** and in 1.2% the drug was interrupted. **Rash acneiform** (19 patients reported 30 rash acneiform events) and **diarrhea** (15 patients reported 20 diarrhea events) were the most common AEs. Regarding the incidence of events of particular interest, one patient (3.3%) registered interstitial lung disease

Conclusions:

In this study, the ORR of 63.3% has shown erlotinib to be effective in patients with NSCLCm as first line therapy. Erlotinib has shown to be safe and tolerable for NSCLCm patients who had not received previous chemotherapy. This way, MuTAR confirms erlotinib as a valid option for first line therapy in EGFR mutated NSCLCm. To our knowledge this is the only study performed in a Portuguese population of EGFR mutated NSCLC patients

1 – Centro Hositalar e Universitário de Coimbra; 2 – Centro Hospitalar São João, Porto; 3 – Centro Hospitalar Lisboa Norte; 4 – Instituto Português de Oncologia Francisco Gentil , Lisboa; 5 – Centro Hospitalat Vila Nova de Gaia/Espinho; 6 – Instituto Português de Oncologia Francisco Gentil, Porto; 7 – Centro Hospitalar do Baixo Vouga; 8- Roche Farmacêutica e Química, Lda.