

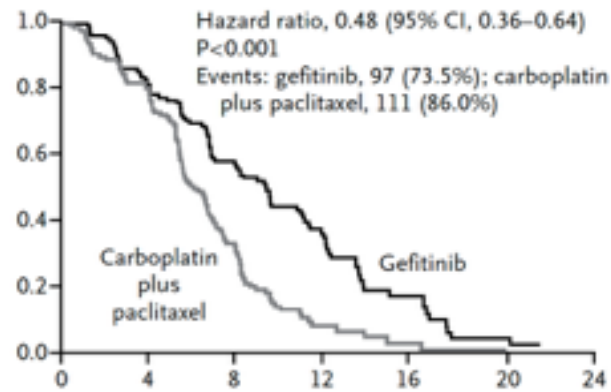
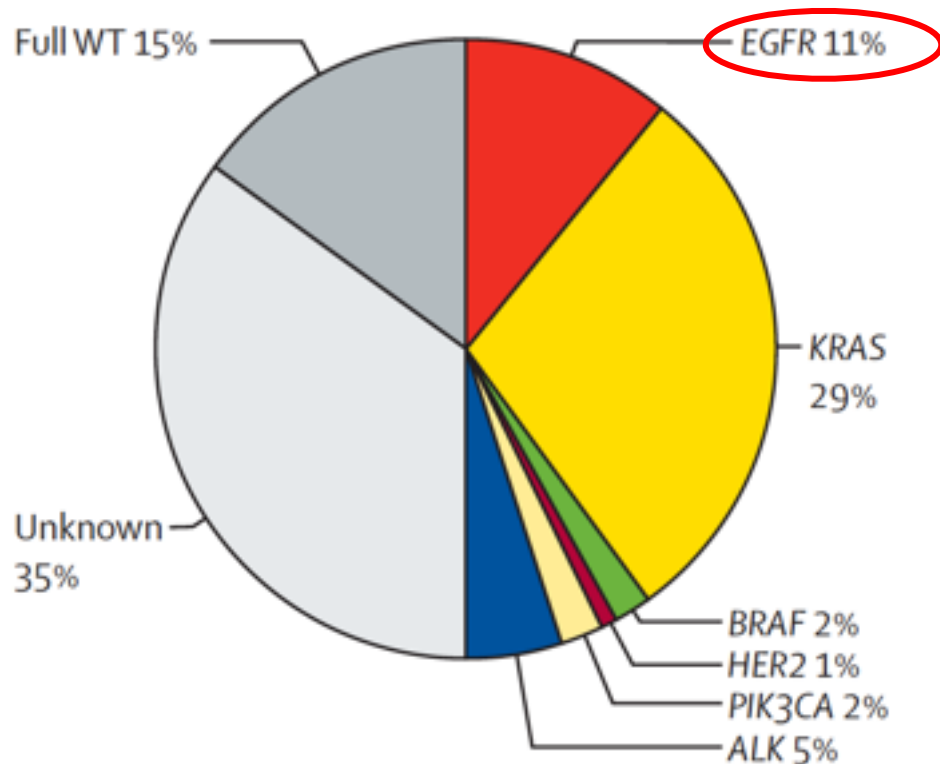
EGFR-TKI resistance in EGFR mutant non-small cell lung cancer patients with brain metastases

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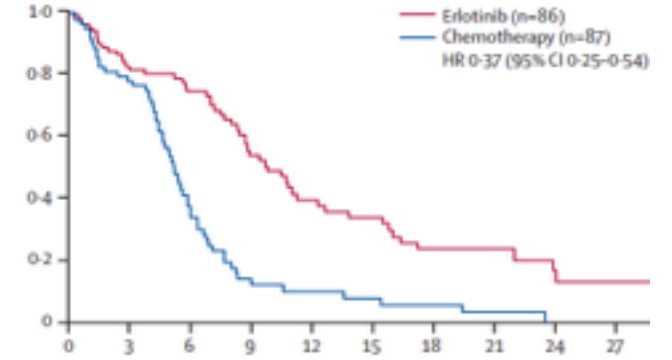
Service d'oncologie multidisciplinaire et d'innovations thérapeutiques

Marseille, France

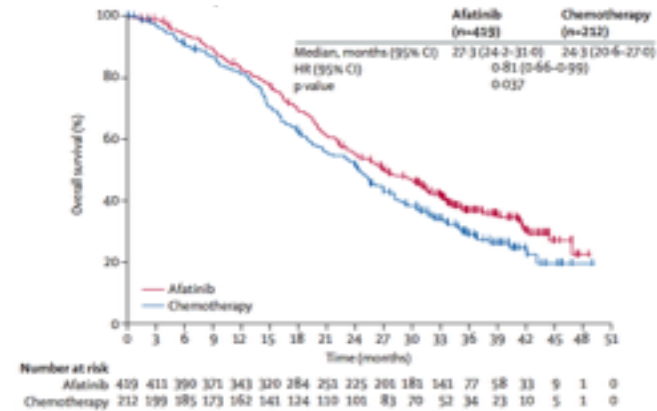
BACKGROUND : FIRST LINE TKIs



GEFITINIB

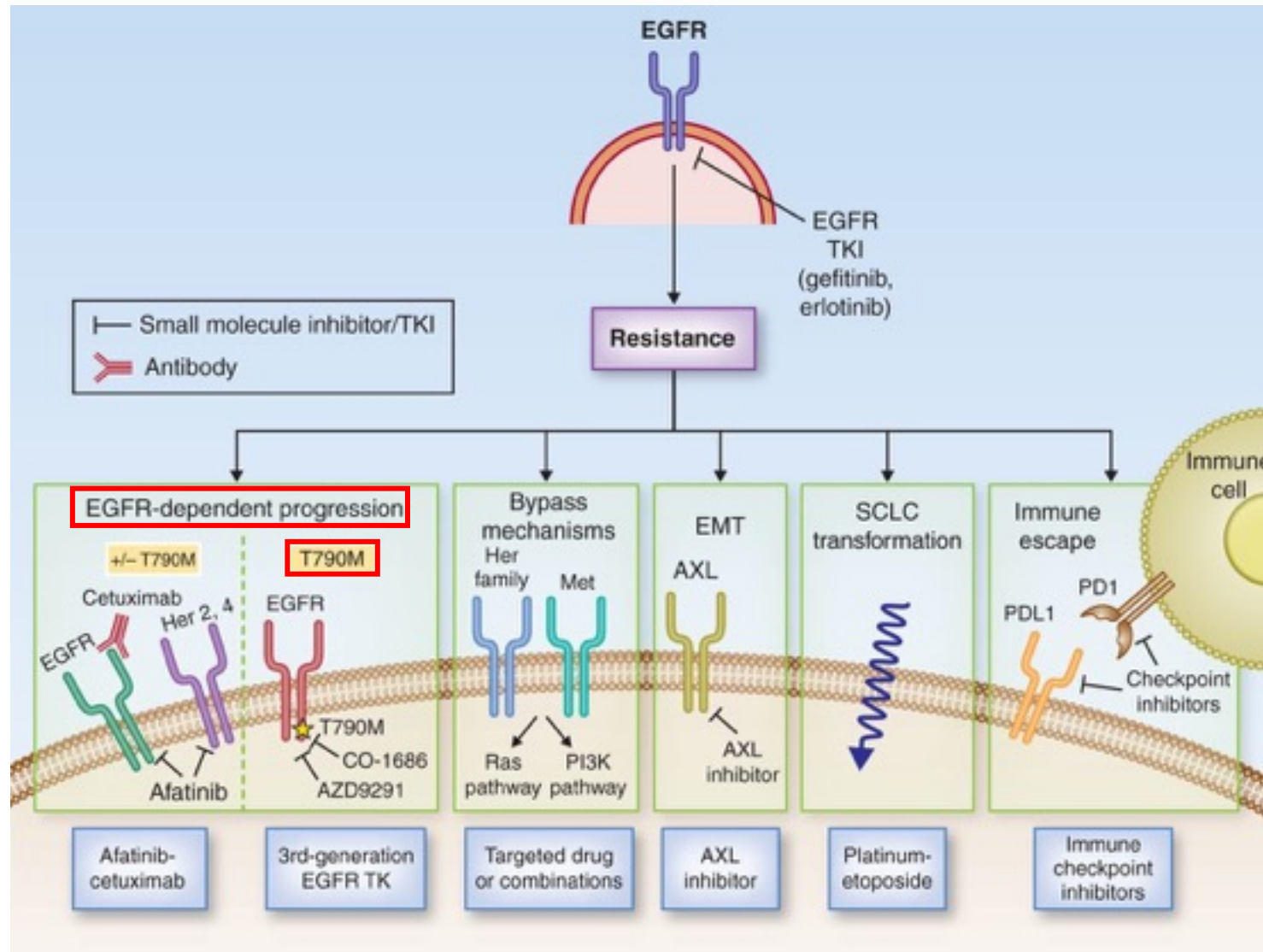


ERLOTINIB

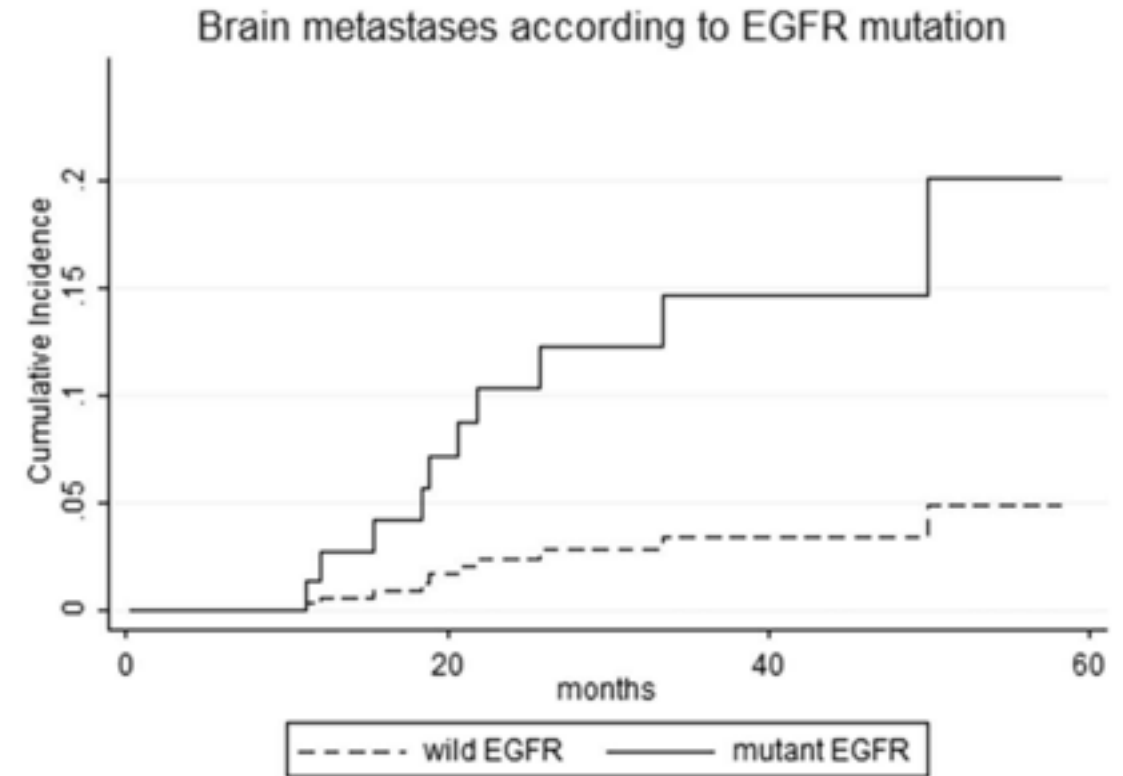
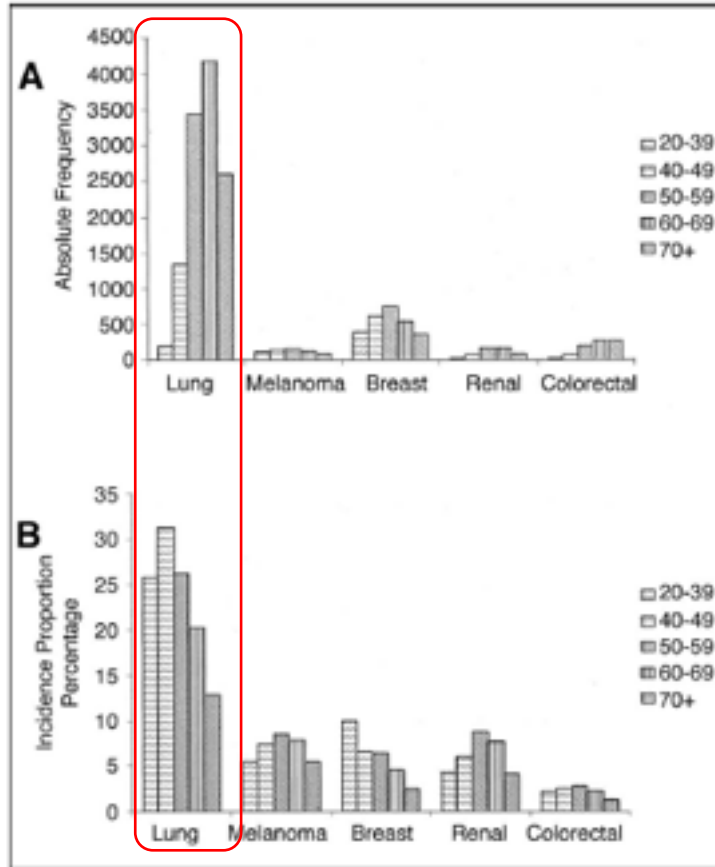


AFATINIB

BACKGROUND : RESISTANCE MECHANISMS

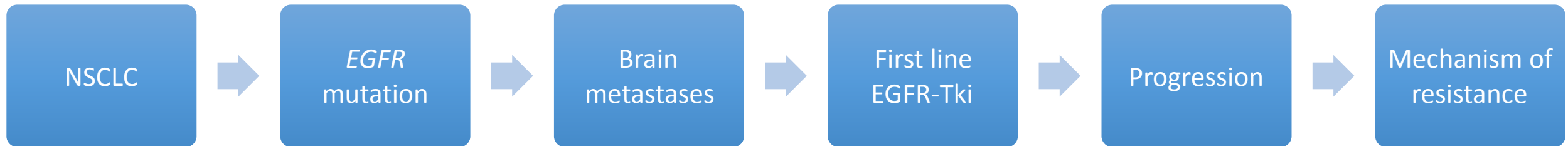


BACKGROUND : EGFR MUTATION AND BRAIN METS



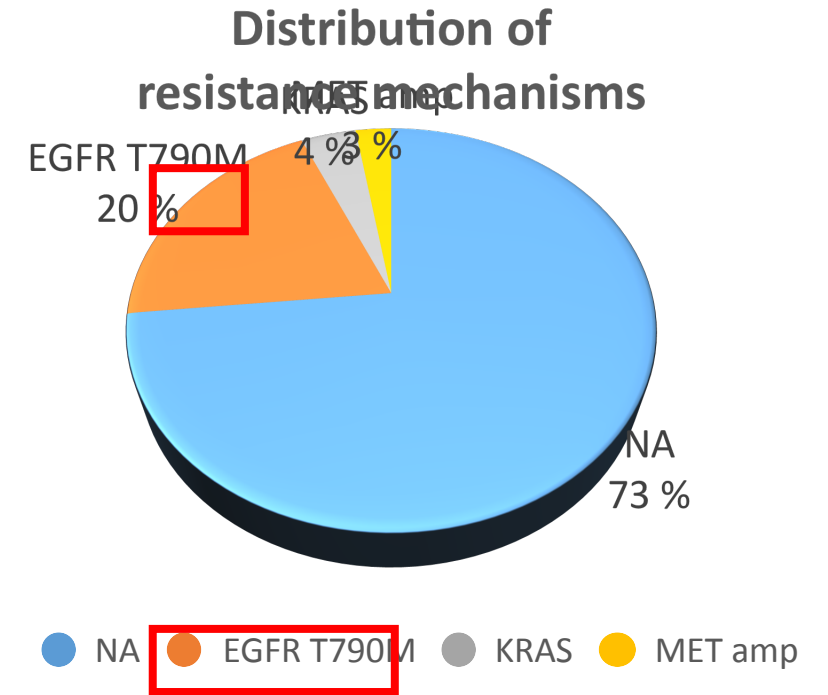
Molecular mechanism of resistance in *EGFR*-mutant NSCLC with BM ?

MATERIAL AND METHODS



- Describe the molecular mechanisms of resistance to EGFR-TKIs
- Compare the molecular profile at progression depending on the sample type.
- Assess the impact of the resistance mechanisms on survival.

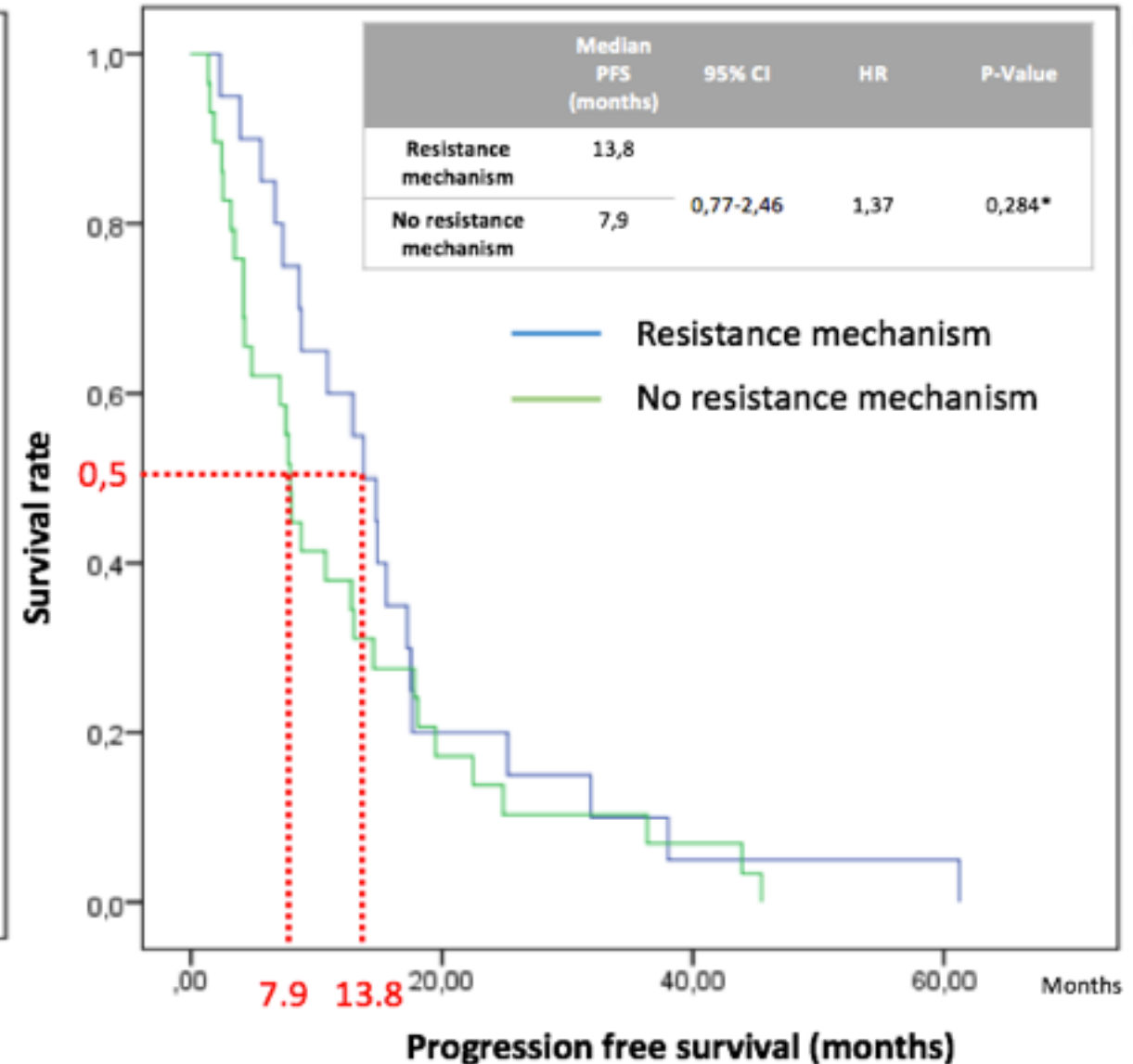
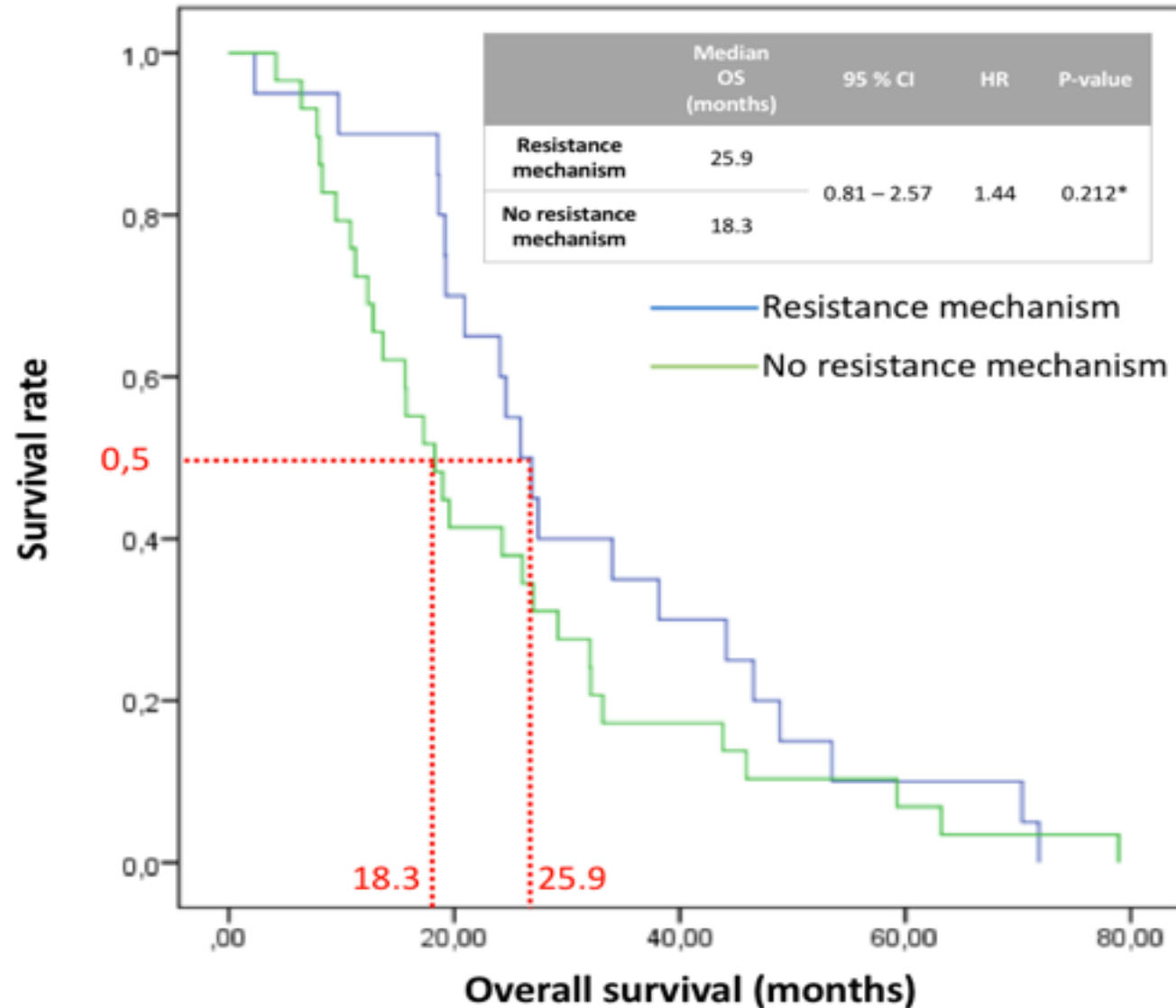
RESULTS



RESULTS

Molecular Biology Results : 83 samples					
Sample (n=83)	No resistance mechanism	Resistance mechanism	<i>KRAS</i> mutation	<i>EGFR</i> T790M mutation	<i>MET</i> amplification
Histology (n=54)	35 (64.8%)	19 (35.1%)	1 (5.2%*, 1.85% **)	16 (84.2%*, 29.6%**)	2 (10.5%*, 3.7%**)
Cytology (n=4)	2 (50%)	2 (50%)	1 (50%*, 25%**)	1 (50%*, 25%**)	0
Liquid biopsy (n=25)	24 (96%)	1 (4%)	0	1 (100%*, 4%**)	0
Primary lesion (n=28)	19 (67.8%)	9 (32.1%)	0	7 (77.7%*, 33.3%**)	2 (22.2%*, 7.1%**)
Metastasis (n=21)	12 (57.1%)	9 (42.8%)	2 (22.2%*9.5%**)	7 (77.7%*, 33.3%**)	0
Brain mets (n=8)	6 (75%)	2 (25%)	0	2 (100%*, 25%**)	0
Lymphe node (n=1)	0	1 (100%)	0	1 (100%*, 100%**)	0

RESULTS



CONCLUSIONS

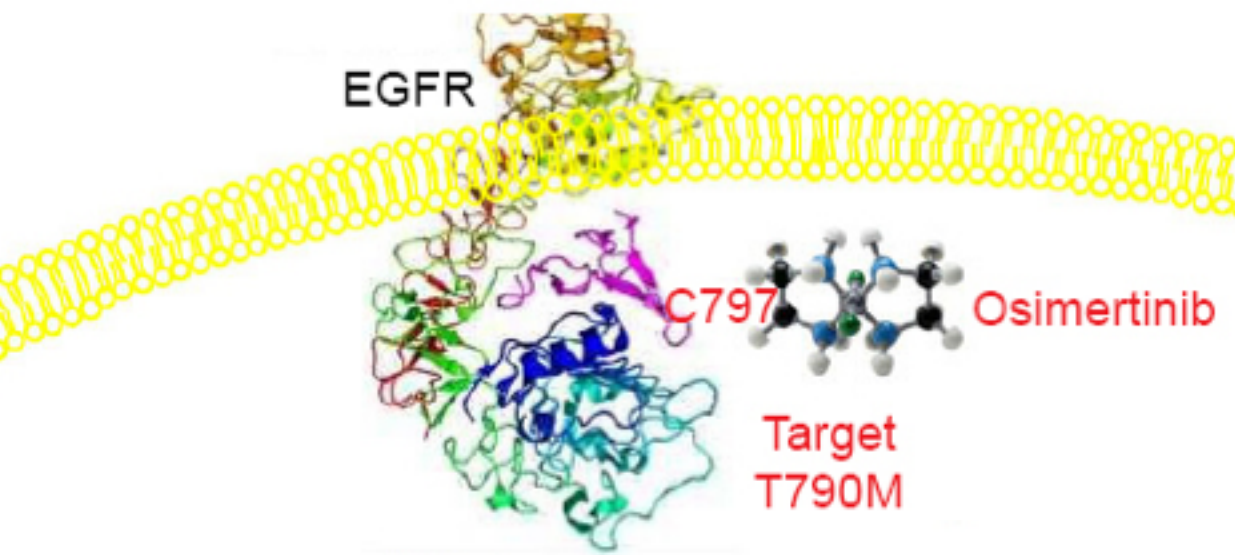
***EGFR* T790M mutation** = leading mechanism of resistance

Tissue and cytological sample > liquid biopsy

Better prognosis of patients with a mechanism of resistance

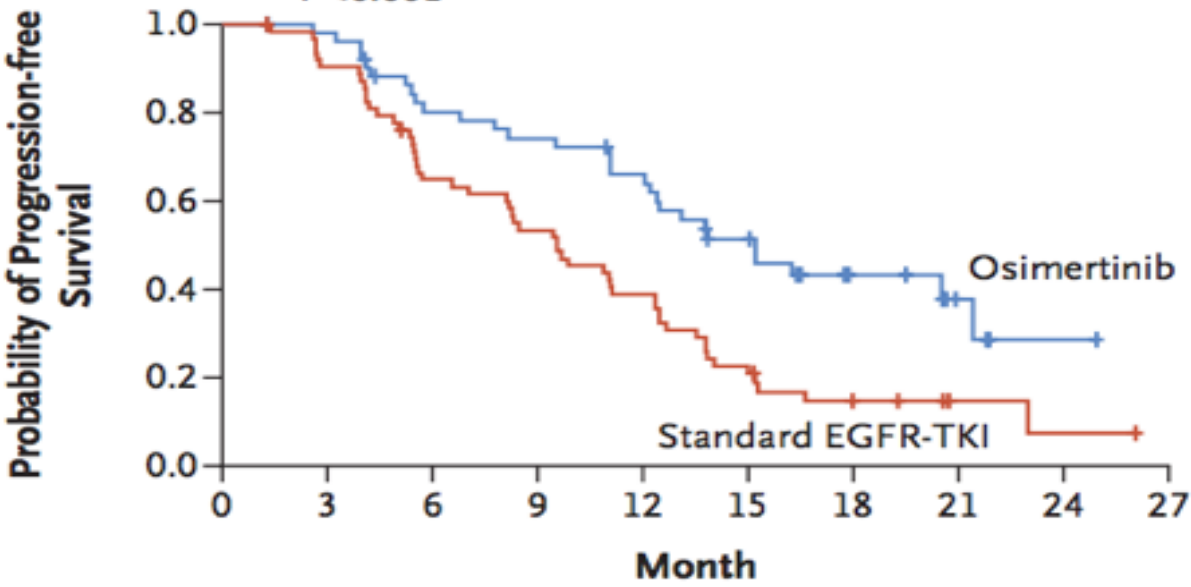
EGFR T790M mutation = leading mechanism of resistance

OSIMERTINIB



	No. of Patients	Median Progression-free Survival (95% CI) mo
Osimertinib	53	15.2 (12.1–21.4)
Standard EGFR-TKI	63	9.6 (7.0–12.4)

Hazard ratio for disease progression or death, 0.47 (95% CI, 0.30–0.74)
P<0.001



No. at Risk	53	51	40	37	32	22	9	4	1	0
Osimertinib	53	51	40	37	32	22	9	4	1	0
Standard EGFR-TKI	63	57	40	33	24	13	6	2	1	0