Nivolumab in Non Small Cell Lung Cancer (NSLCC): French evaluation of use, current practices and medico economic approach

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R Corre[1] (*romain.corre@chu-rennes.fr*), T Urban[2] (*ThUrban@chu-angers.fr*), M Travers[3], B Moiteaux[3], G Robinet[4], AM Chiappa[5], S Hiret[6], G Le Garff[7], S Bordenave[8], R Lamy[9], A Bizieux[10], C El Kouri[11], C Rogé[12], F Denis[13], Y Curran[14], T Chatellier[15], P Masson[16], U Lerolle[17], T Pigeanne[18], O Molinier[19], D Marquette[20], Y Le Guen[21], P Soulié[6], JF Fourure[22], NE Achour[23], S Gouva[24], H Le Caer[25], D Besson[26], F Appolinaire[13], C Bertrand[27], R Bessard[20], E Certain[21], N Cormier[11], C Devys[6], C Fronteau[8], M Gauton[26], L Le Quay[2], MA Lester[1], JC Maupetit[28], JP Metges[4,30], G Piriou[29], F Riaud[10], AM Vidal[19], D Déniel Lagadec[29,30], F Marhuenda[28,30], F Grudé[28,29,30]

[1]CHU Rennes, [2]CHU Angers, [3]Université de Nantes, [4]CHRU Brest, [5]CHIC Quimper, [6]Institut de Cancérologie de l'Ouest, [7]CH Saint Brieuc, [8]CHU Nantes, [9]CHBS Lorient , [10]CHD Vendée, [11]HP Confluent, [12]CH Morlaix, [13]Centre Jean Bernard, [14]CH Saint Malo, [15]Clinique Mutualiste de l'Estuaire, [16]CH Cholet, [17]Clinique Saint Joseph, [18]CH Côte des Lumières, [19]CH le Mans, [20]CHBA Vannes, [21]CHP Saint Grégoire, [22]HP Océane, [23]Clinique Pasteur Brest, [24]CH Landerneau, [25]CH Lannion, [26]HP Côte d'Armor, [27]Centre Eugène Marquis Rennes, [28]OMEDIT Pays de Loire (PL), [29]OMEDIT Bretagne (B), [30]Observatoire dédié au Cancer BPL

Observatory of Cancer BPL (OMEDIT)

- Created in 2003 by Regional Representatives of French ministry of health
- Collects data from both private and public hospitals
- Provides a reflexion on drug management to optimize health care

Introduction

In 2016, **Nivolumab/Opdivo®** could be prescribed according to French registration in **stage IIIB/IV NSCLC** after disease progression after prior platinum-based chemotherapy and TKI therapy for patients with EGFR mutation. Patients had to be in good general state (ECOG PS 0-1)
OMEDIT has evaluated its use, current practices and medico economic approach in Bretagne and Pays de la Loire areas.

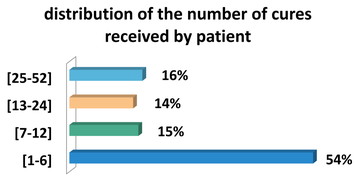
Methods

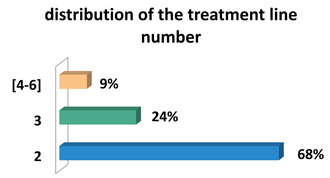
Adult patients with stage **IIIB/IV NSCLC** initiated nivolumab (3 mg/kg every 2 weeks) in 2016 according or not to French Registration (ECOG PS).
→ Minimum follow-up was 12 months (point date : December 31, 2017)

Collected data : Sex, age, mutation profile, toxicities, **Clinic Benefit** (**CB** : pts with complete/partial response/stable disease as the best response), **Progression Free Survival** (**PFS**) and **Overall Survival** (**OS**)

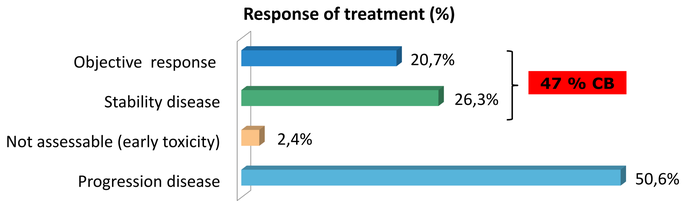
Population description

- **781 patients (pts)** included in **28 centers**
- **Sex ratio :** 70.2% Men / 29.8% Women
- **Mean age :** 64 years for Men / 62 years for Women (**11.5% ≥ 75 years old**)
- **NSLCC:** 28.4 % squamous, 54.7% non-squamous and 16.9% undifferentiated
- **20.6** % PS≥ 2 ⇒ not according to French Registration



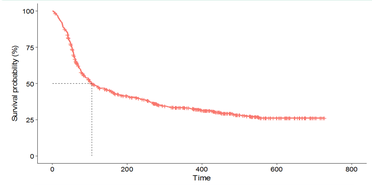


Treatment efficacy

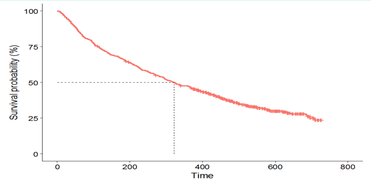


Best Response	Number of administration			
	[1-6]	[7-12]	[13-24]	[25-52]
CB	14.7%	73.3%	98.2%	100%
Progression Disease	85.3%	26.7%	1.8%	0%

Global PFS and OS



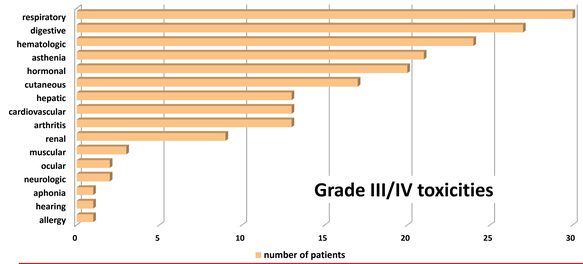
Median PFS = 3.5 months



Median OS = 10.6 months

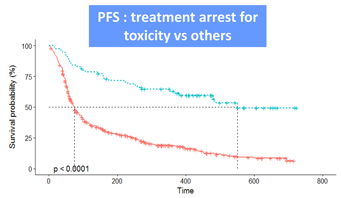
⇨ no statistical influence (at the risk level of 5 %) on survival according to tumor histology (squamous, non-squamous, undifferentiated) , to treatment line number (2 vs 3 vs [4- 6]), to previous treatment (ttt) (data not shown).

Safety



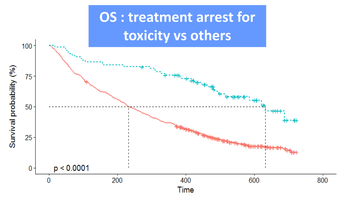
	Number of administration				
	[1-6]	[7-12]	[13-24]	[25-52]	Total
Pts with toxicity	67	31	29	25	152
Ttt arrest for toxicty	31	17	18	9	75

19.7% of patients had at least one grade III/IV toxicity (immediate or late toxicities)



Arrest for Toxicity

Others causes of arrest

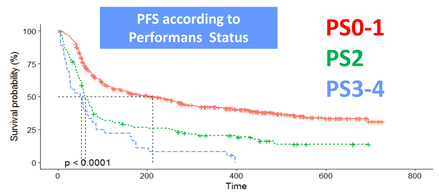


mPFS = 18.1 m vs 2.5m

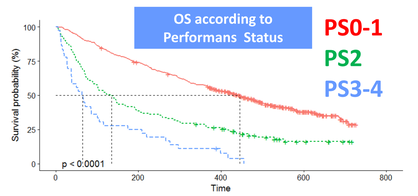
mOS = 20.8 m vs 7.6 m

⇨better PFS and OS when nivo treatment has been stopped for grade III/IV toxicity
⇨better PFS and OS when patients have presented grade III/IV toxicity
(respectively p<0.0001 and p=0.0028, data not shown)

Performans Status (ECOG)



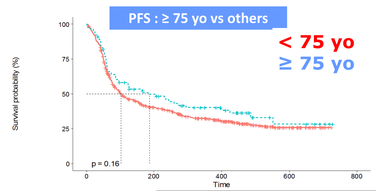
mPFS PS0-1 = 7.0 m
mPFS PS2 = 2.0 m
mPFS PS3-4 = 1.7 m

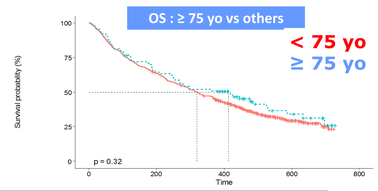


mOS PS0-1 = 14.6m
mOS PS2 = 4.4 m
mOS PS3-4 = 2.1 m

⇨Important loss of OS and PFS for PS ≥ 2 patients

Elderly patients (≥ 75 years old)

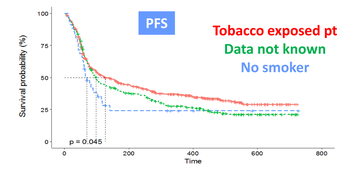


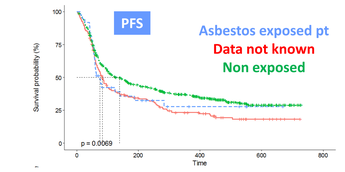


	mean number of cures	p-value	grade III/IV toxicity	p-value
<75 yo	11.4	0.84	19.7%	1
≥75 yo	11.7		20.0%	

⇨No statistical differences between "young" or elderly patients for PFS, OS, treatment duration and toxicity.

Tobacco / Asbestos





Similar data for OS (data not shown).
Survival seems a bit better for tobacco exposed pts (current and former smokers, passive tobacco) and for non exposed to asbestos pts.

Medico economic

- Mean hospitalization cost = 389 € (public center= 403 € / private = 309 €) and mean sanitary transport cost= 31 €
  ⇨ **Mean hospital and transport cost = 417 €**
- **Cost of nivolumab cure** (3mg/kg) **= 3 000 €**
- 781 patients received 8 932 cures of treatment (in 2016 and 2017). Among them, 7 408 cures for patients who presented clinical benefit (CB)
- **Total cost = 30.5 millions €** (3417*8932)
- **CB cost = 25.3 millions €** (3417*7408)

⇨**83%** of costs were dedicated to patients who experienced CB

Conclusion

Differences in patient survival have been found according to the care centers which could be explained by difference in practices (PS≥2 proportion, …).

It is important to remember the **recommendations NCCN** for the medical care of NSCLC (2017) : supportive care only for PS 3/4 patient.

Moreover, strong decrease of survival has been shown here for PS2 patients too. Feedback will be done by care center.