ESMO IMMUNO-ONCOLOGY VIRTUAL CONGRESS

Real world experience of Immunotherapy in elderly cancer patients in a UK cancer centre

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Background:

Cancer tends to affect the elderly; however, they are less represented in clinical trials. Therefore, real-world data of Immune-related adverse events (irAEs) of elderly patients on immune checkpoint inhibitor (ICIs) can help with pragmatic assessment of risk/benefit in this more vulnerable population.

Methods

Patients aged **≥65 years** with non-small cell lung cancer (NSCLC), malignant melanoma (MM) or renal cell carcinoma (RCC) on ICI (non- curative intent) either as monotherapy (MT) or in combination (CT), between 2016 – 2018 at Castle Hill Hospital were included in this retrospective analysis to review irAEs and outcome. Analyses were performed with SPSS v25.

Results

- There were **90 patients** who received ICI (Table 1)
- 47.8% (43/90) had NSCLC, 33.3% (30/90) MM and 18.9% (17/90).had RCC
- **87.8%** of patients received single (SA) agent PD-1, **6.7%** SA CTLA-4, **3.3%** SA PD-L1 (3.3%) and **2.2%** combination PD-1/ CTLA-4 (Figure 1)

Table 1: Demographics

Demographics	n= 90
Median Age at Diagnosis (years)	70 ± 6.1
Median Age at starting ICI (years)	71 ± 6.1
	Frequency (%)
Gender	
Male	59 (65.6)
Female	31 (34.4)
Ethnicity - White	90 (91)
Pre-existing Autoimmune disease	
None	79 (87.8)
Hypothyroidism	**3 (3.3)**
IBD	2.2 (2)
Psoriasis	2.2 (2)
Rheumatoid arthritis	2.2 (2)
PS 0	20 (22.2)
1	51 (56.7)
2	6 (6.7)
Missing data	13 (14.4)
Status at Censor	
Alive	41 (45.6)
Dead	49 (54.4)

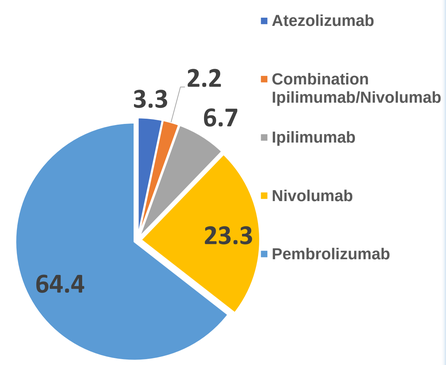

Figure 1: Type of immune checkpoint inhibitor (ICI)

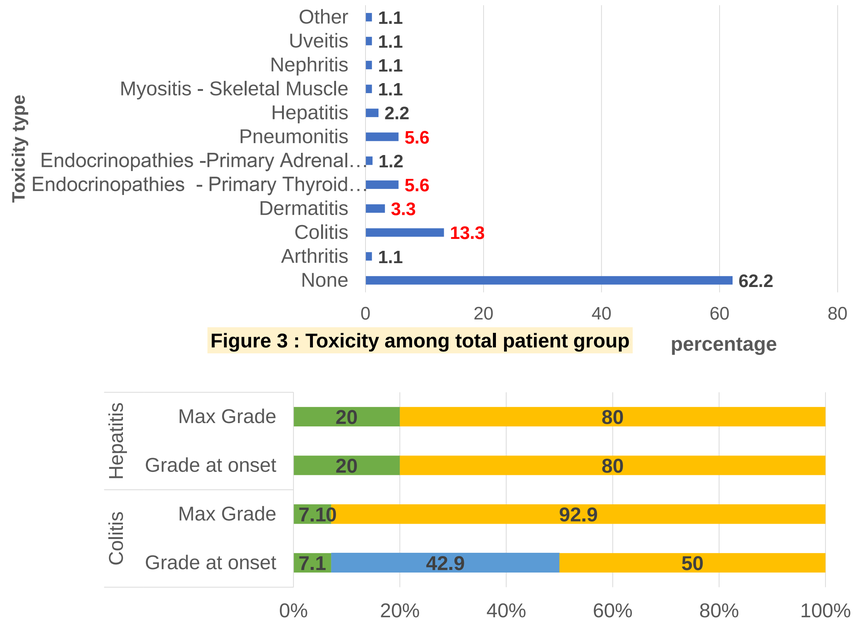

Figure 3 : Toxicity among total patient group

Figure 4 : Grade of toxicity

Conclusion

- Out of 90 patient **1/3** (38.5%) experience irAE
- Clinically significant irAE leading to hospital admission accounted for 233 bed days.
- Average length of stay in hospital was 12.3 days.
- **63.3%** elderly patients needed hospital admission, which is higher compared to the real world data where irAE led to hospital admission in 42% patients.
- Colitis (11/19) and pneumonitis (3/19) accounted for most admissions.
- Progression free survival (PFS) and overall survival (OS) was higher for patients with irAE (Figure 5).

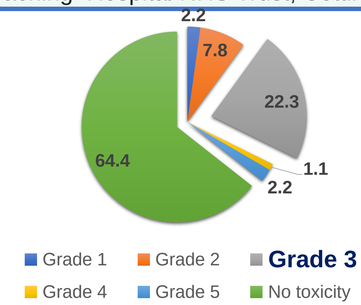

Figure 2: Toxicity Grade

- 35/90 had an irAEs; 94.2% (33/35) on MT and 5.8% (2/35) on CT.
- **Clinically significant irAE** was observed in **30/90 (33.3%)** patients with near **1/5th** (20/90) suffering from Grade 3 toxicities (Figure 2)
- **12.2% (11/90)** of patients had pre-existing autoimmune disease, 45.4% (5/11) of them experienced irAE.
- Most common IrAEs witnessed were **colitis 12 (13.3%),** thyroiditis 5 (5.6%), pneumonitis 5 (5.6%) and dermatitis 3 (3.3%). (Figure 3, Figure 4)
- There were **2 cases of grade 5** irAE with αPD-1 MT (1 **pneumonitis,**1 **nephritis**). 86.6% (26/30) with clinically significant irAE required corticosteroids with almost half of them needing systemic corticosteroids.
- Steroid sparing immunosuppression was used in 13.3% (4/30).

PFS for irAE Vs No irAEv16.3 months [95% CI 7.9, 24.8] Vs 4.6 months [95% CI 1.7, 7.6], *p*= 0.003

OS for irAE Vs No irAE 30 months [95% CI 18, 41.9] Vs 7.4 months [95% CI 3.2, 11.6], *p*=0.01).

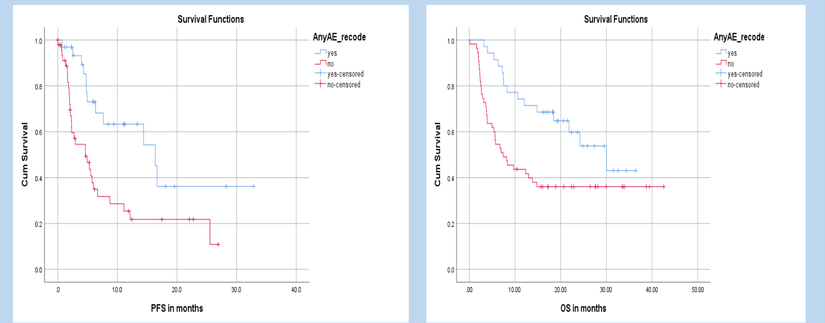

Figure 5: Progression Free Survival (PFS) and Overall Survival (OS) for No irAE Vs irAE

<u>Future Directions for Research:</u> There appears to be a toxicity-efficacy relationship with irAEs. Larger Prospective studies are required to validate this.

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