Nature Reviews Urology | Published online 19 Apr 2016; doi:10.1038/nrurol.2016.73

THERAPY

Anti-PD-1 antibodies: effective in GCTs?

A small case series recently published in *Annals of Oncology* investigates immune checkpoint inhibition using anti-PD-1 antibody treatment in patients with platinum-refractory germ cell tumours (GCTs).

Outcomes are poor for patients with platinum-refractory GCTs who relapse after stem cell transplantation or are not suitable for such therapy. Anti-PD-1 antibodies have shown efficacy in some cancers and PD-L1 expression is common in testicular GCTs.

Zschäbitz *et al.* report on use of anti-PD-1 antibodies in four patients with GCTs who were refractory to platinum and many other treatments. Two patients with PD-L1-negative primary mediastinal yolk sac tumours showed immediate progression following treatment with anti-PD1 antibodies and treatment was ceased. A third patient, with a PD-L1-negative immature teratoma and yolk sac tumour of the left testicle (and liver and bone metastases) received two 3-weekly cycles of anti-PD-1 inhibition; progressive disease was shown at the first staging. Following three further cycles of anti-PD-1 inhibition, staging showed a mixed response and tumour marker decline, but after 10 cycles, staging showed clear progression and anti-PD1 therapy was stopped. A fourth patient with a PD-L1-positive germinoma of the hypophysis received 3-weekly cycles of anti-PD-1 therapy plus the topoisomerase inhibitor etoposide and showed a good partial response after four cycles. After 3 months, staging showed stable disease and etoposide was discontinued while anti-PD-1 therapy was continued. After 15 cycles, staging showed a near complete remission.

The authors says that although immune checkpoint inhibition with anti-PD-1 treatment cannot be recommended for treatment of patients with platinum-refractory GCTs outside of clinical trials, prospective trials are warranted to further evaluate immune checkpoint blockade in such patients.

Rebecca Kelsey

ORIGINAL ARTICLE Zschäbitz, S. *et al.* Activity of immune checkpoint inhibition in platinum refractory germ cell tumors. *Ann. Oncol.* http://dx.doi.org/10.1093/annonc/mdw146 (2016)