# AB057. SOH23ABS_188. PDL-1 expression based on aetiology of mismatch repair deficiency—are there differences between molecularly lynch and sporadic colorectal cancer?

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**Background:** Data regarding the response of Lynch syndrome (LS) colorectal cancer (CRC) to immune checkpoint inhibitors (ICIs) is scarce. Aim: to investigate differences in clinicopathological, local and systemic inflammation and programmed death-ligand 1 (PD-L1) expression as measured in tumour [Tumour Proportion Score (TPS)] and tumour plus immune cells [Combined Positive Score (CPS)] relative to all viable tumour cells.
**Methods:** Consecutive patients undergoing resection for CRC were identified from a prospectively maintained institutional database from January 2004 to December 2015 inclusive. Immunohistochemistry (IHC) was used to identify mismatch repair (MMR) status and PD-L1 expression. Molecular analysis for BRAFV600E mutation hotspot was performed selectively on MLH1-deficient tumours. Absence of MLH1, BRAF, MSH2, MSH6 or PMS2 were characterised as molecularly LS.
**Results:** A total of 238 mismatch repair deficient colorectal cancers (dMMR CRCs) were identified, with median follow up of 45 months (95% CI: 38.538, 51.462). Of these 91.5% (n=218) had tissue blocks adequate for PD-L1 IHC. In total 93 (39.1%) were characterised as LS and 145 (60.9%) were classified as sporadic. The mean age was 78.19 [standard deviation (SD) =30.826] and 64.26 (SD =14.756) respectively [mean difference (MD) 4.066; P<0.001]. Sporadic CRC were more commonly female (69.5%, P<0.001) and right-sided (90.3%, P<0.001). BRAF mutation was identified in 60.5% (n=144). There was no difference in KM scores (P=0.847) or modified Glasgow prognostic score (P=0.121). The 5-year overall survival rate was 79.1% and 76.5% (P=0.303), while 5-year disease-free survival was 75.4% and 67.4% (P=0.600) for sporadic CRC and LS tumours, respectively. There was a difference in mean TPS scores (P=0.003), but no difference in mean CPS scores (P=0.599).
**Conclusions:** There was no difference in markers of local or systemic immune response, and survival between groups. Although, there was a difference in TPS, there was no difference in CPS. These results suggest that there is unlikely to be a difference in ICI efficacy based on aetiology of dMMR in CRC.
**Keywords:** Immune checkpoint inhibitors (ICIs); colorectal cancer (CRC); programmed death-ligand 1 (PD-L1); mismatch repair deficiency; Combined Positive Score (CPS)

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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