

OPTICAL PD-L1 IMAGING USING ULTRASOUND-GUIDED QUANTITATIVE FLUORESCENCE MOLECULAR ENDOSCOPY COMBINED WITH DURVALUMAB-680LT IN LOCALLY ADVANCED ESOPHAGEAL CANCER PATIENTS

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Presentation

Digestive Oncology

Endoscopy

Mechanisms & Personalised Medicine

Oesophagus

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Ultrasound-guided quantitative fluorescence molecular endoscopy using fluorescently labelled durvalumab-680LT safely visualized PD-L1 drug distribution in esophageal cancer patients before and after neoadjuvant chemoradiotherapy, revealing marked inter- and intra-patient heterogeneity in tumor uptake.

KEY POINTS

- In this ongoing dose-finding study of 18 esophageal cancer patients (cohorts: control, 4.5 mg, 15 mg, 25 mg durvalumab-680LT), higher fluorescence signals were visualized in tumor compared to healthy tissue both in vivo and ex vivo, with median tumor signals of 94.8 a.u. versus 31.0 a.u. in healthy tissue (4.5 mg cohort, $p=0.125$) and 103.9 a.u. versus 27.1 a.u. (15 mg cohort, $p=0.0625$).
- Tumor fluorescence signals showed a broad range, indicating substantial inter- and intra-patient differences in PD-L1 expression and drug uptake.
- No serious adverse events occurred with durvalumab-680LT administration.
- Only the 15 mg dose was sufficient to visualize membrane-bound durvalumab by fluorescence microscopy, and signals were lower and more homogeneous after neoadjuvant chemoradiotherapy.
- The technique demonstrated potential for guiding patient selection for immune checkpoint inhibitor therapy, with further analyses ongoing including correlation to PD-L1 staining and drug-target interaction visualization.

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