IL-10 and CXCL10 Urine Quantification as Useful Biomarkers to Predict BCG Response in Bladder Cancer Patients

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BACKGROUND
Currently there is no way to predict response to BCG in high risk NMIBC

AIM
1. Can urine IL-10 & CXCL10 measured before the TURBT predict response to BCG?
2. Do their urine levels correlate with the presence of M2 cells in tumor tissue?

MATERIALS AND METHODS
1. Urine samples obtained before TURBT
2. Tissue samples obtained at TURBT
3. BCG response = no recurrence at 2 years
4. IL-10 & CXCL10 levels measured by ELISA and RT-qPCR
5. Number of macrophages and M2 polarized measured by immunohistochemistry, using CD163 and CD68
RESULTS

20 patients analyzed

- **IL-10** mRNA in tumor tissue (relative to TBP)
  - mRNA level: $p < 0.0001$, $r = 0.63$
  - mRNA level in urine: $p < 0.01$

- **CXCL10** mRNA in tumor tissue (relative to GAPDH)
  - mRNA level: $p < 0.0001$, $r = 0.7$

- **Macrophage score**

- **Exhausted CD8 T cell score**

- **Expression of CD163**
  - Response: $0.8$, Non-response: $0.6$

- **Expression of CD166**
  - Response: $0.9$, Non-response: $0.7$

- **Expression of Survivin**
  - Response: $0.4$, Non-response: $0.3$

- **Expression of IDO**
  - Response: $0.5$, Non-response: $0.4$

- **Expression of PD-L1**
  - Response: $0.3$, Non-response: $0.2$

Significance levels:
- * $p < 0.05$
- ** $p < 0.01$
1. The presence of M2 polarized macrophages in TURBT tissue correlates with the levels of IL-10 & CXCL10 in urine.
2. Both M2 cells in tissue and IL-10/CXCL10 in urine appear to be predictive for BCG response.
3. However, validation in a larger cohort is needed to confirm our data.