A pilot study to assess reproducibility of 1,305 proteins in peritoneal fluid

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BACKGROUND

- Identifying biomarkers in the peritoneal fluid could lead to novel diagnostic tests or treatment options for women with endometriosis.
- In order to identify biomarkers, we first need to assess reproducibility of protein measurements
- Proteins measured in blood on the SOMAscan have been shown to be reproducible. However, the reproducibility of proteins from peritoneal fluid is unknown.

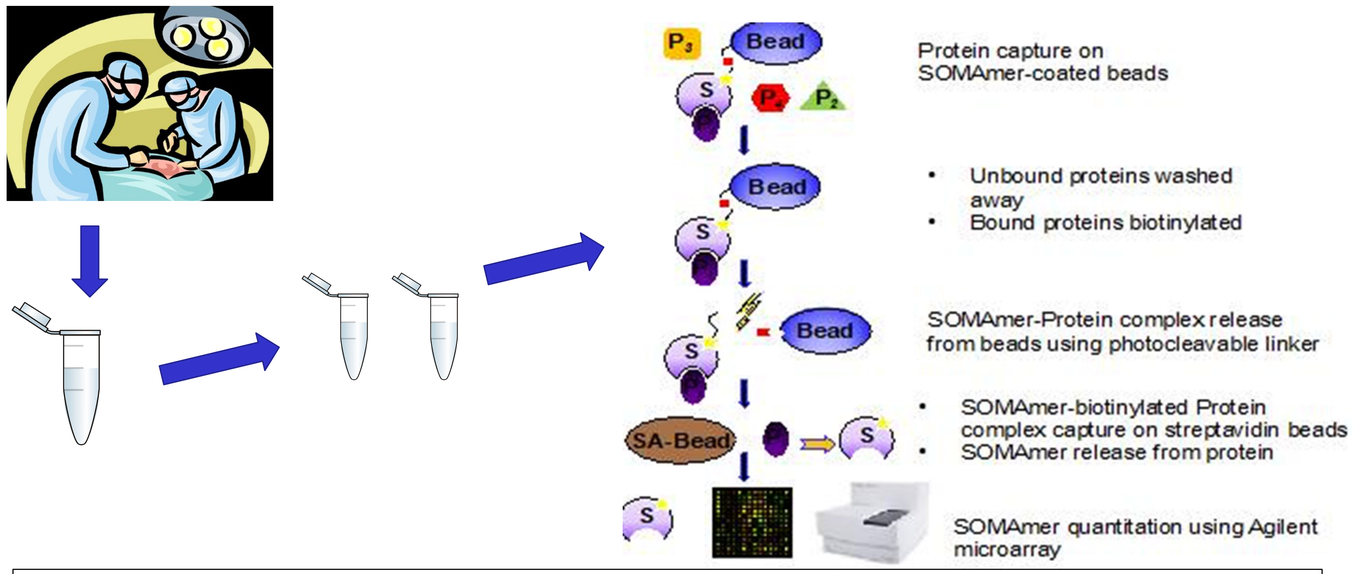

Figure 1. Study design. Peritoneal fluid samples are collected during surgery and split into aliquots. Proteins are measured on Somascan platform and consistency of results between duplicate samples is compared.

METHODS

- Peritoneal fluid samples were collected during laparoscopic surgery.
- Samples were collected from 13 women with endometriosis.
- We measured 1,305 proteins on 26 samples (13 run in duplicate) on the SOMAscan platform.
- Proteins included inflammatory chemokines, cytokines, growth factors, immune markers, soluble receptors, and hormones.
- We estimated assay variability by calculating the intra-assay and inter-assay coefficients of variation (CVs; standard deviation over the mean)

RESULTS

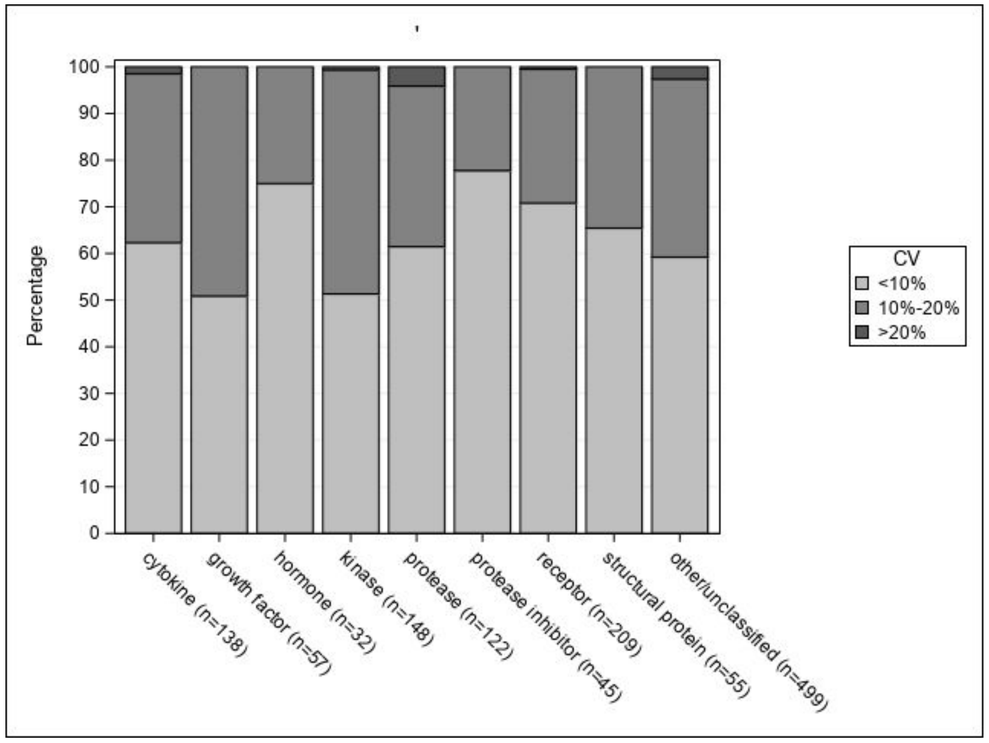

Figure 2. Distribution of CVs by protein class.

- Of the 1,305 proteins, 62% had CV <10% and 98% had CV <20%, with only 5 proteins having CV>25%.

CONCLUSIONS

- Measurements from this platform are highly reproducible.
- Low CVs across protein classes provide support for use of this multiplex platform to evaluate protein markers in peritoneal fluid.
- These methods can be used to validly discover potential diagnostic and prognostic biomarkers for endometriosis.

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