Static Venous Pressure Does Not Correlate with Access Blood Flow

BACKGROUND
Measurement of AV graft static venous pressure has been championed as a non-invasive screening test for venous stenosis, and is listed in the KDOQI Guidelines as the second surveillance method of choice following access flow measurement. The attraction of static venous pressure as a surveillance tool is that:
1) it can be performed during the dialysis session
2) does not require any other equipment other than a dialysis machine with a digital pressure display.

OBJECTIVE
The purpose of the prospective multicenter study was to investigate the relationship between Static Venous Pressure Ratio (SIAVPR) and vascular access flow, and to investigate the premise that KDOQI-designated abnormal SIAVPR thresholds are indicative of low flow.

STUDY
- Included 242 patients (146 prosthetic grafts, 96 arteriovenous fistulas).
- SIAVPR and flow were simultaneously measured monthly;
- Total of 1161 measurement sessions during the 8-month study period.
- Each patient has an average of 4.8 measurements.

RESULTS
- The study showed that SIAVPR at any threshold cannot discriminate between an access with clinically significant stenosis and a well-functioning access with high flows.
- A mathematical formula presented demonstrates that SIAVPR only indicates the relative relation of outflow resistance to resistances and is unrelated to Qa.

CONCLUSION
Although SIAVPR may detect outflow stenosis, it is as likely to wrongly target well functioning access for referral as well. Therefore, an absolute SIAVPR at any level should not be used as a surrogate for low flow or access dysfunction.

TAKE HOME
This paper is important because it categorically reputes the validity of using venous pressure monitoring to predict thrombosis.

REFERENCE