INVITED COMMENTARY

Comments regarding ‘Natural History of Thoraco-abdominal Aneurysm in High-Risk Patients’

G. Melissano*, R. Chiesa

Scientific Institute H. San Raffaele, Vascular Surgery, Vita Salute San Raffaele University, Via Olgettina 60, Milan 20090, Italy

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In the present issue of the European Journal of Vascular and Endovascular Surgery, Hansen et al. report the outcome of patients with Thoracoabdominal Aortic Aneurysms (TAAA) assessed by the Scottish National TAAA Service and left untreated because judged unfit for surgery.

This topic is of considerable interest because little new data was published on the natural history of patients with TAAA since Crawford and De Natale in 1986 showed that only 24% of unoperated subjects with a TAAA were alive at 2 years.

Although much attention was paid by the Authors in the creation of the database and in the prospective collection of the data, a number of limitations exist that may prevent using these results in a generalized fashion.

1) Referral: it is explained that the Scottish National TAAA Service is a tertiary referral centre therefore patients have been previously screened and selected by their practitioners, regional vascular units and district general hospitals. The overall number of patients observed over a seven years period is 216 and given the Scottish population of over five million it is likely that not all patients thoracic or TAAA in Scotland were assessed and managed at the Authors’ Institution.

2) Selection: the series presented does not include only patients with TAAA (as the title suggests), 25 assessed patients (3 non-operated) actually had a descending thoracic aneurysm (DTA) and not a TAAA; moreover 99 assessed patients (33 non-operated) had either a Type IV TAAA or a Suprarenal AAA. The therapeutic options and the natural history of patients with DTA or Suprarenal AAA are certainly different from those of patient with TAAA.

3) Fitness criteria: the paper studies a cohort of 89 patients considered unfit for operations for several reasons listed in Tab. 3. Unfortunately no criteria or parameters are given (i.e. GFR, FEV1, NYHA class, EUROSCORE, ASA class etc.). Their "multidisciplinary approach to gauge the composite effect of all co-morbidities which is considered in the light of the magnitude of the proposed operation" may work very well clinically but makes the use of these data by others very hard. A patient considered “Unfit” at one Institution may be very well operated at a different, possibly more experienced one.

4) Evaluation of outcome: it is acknowledged in the paper that "the UK has a low rate of post-mortem examinations and the limitations of using death certificate data” however the information regarding how many patients received a post-mortem examination is not available.

In particular there could be a weakness in the data not only as far as the 4 patients with no information are concerned, but also for the patients with a death certificate
reporting non-aneurysm related death. In patients with TAAA the range of symptoms heralding rupture may be very heterogeneous also including chest pain. Patients with thoracic rupture of the TAAA presenting with chest pain and sudden death may well have received a clinical diagnosis of heart attack.

5) **Follow up data:** unfortunately data regarding treatment of risk factors, such as smoke cessation, arterial pressure control, and in particular therapy with beta-blockers and statins are not available in this study. This could be important in the light of recent data that suggests that survival in high-risk vascular patients is correlated more closely to compliance to medical therapy than to treatment of the aneurysm.

In spite of the above mentioned limitations and possible confounding factors the study by Hansen et al. confirms that TAAA is a very morbid condition and patients relegated to simple observation face an awfully sobering long-term outcome. These data represents a strong stimulus for the advancement of new techniques and technologies, including endovascular and hybrid approaches, to offer to patients with TAAA.

**Reference**