

Acute Aortic Syndrome. The RADAR Study, Multicenter Registry

NOEDIR A G STOLF¹, RICARDO R DIAS¹

A total of twelve hospital centers from Buenos Aires participated in the RADAR Study about the acute aortic syndrome (AAS) carried out by a group of researchers on cardiovascular emergencies from the Argentine Society of Cardiology. The objective of this study consists of characterizing the cases of aortic dissection, intramural hematoma, and penetrating aortic ulcer observing the forms of presentation of these conditions, the diagnostic methods used, and the therapy adopted to evaluate the prognosis of patients.

There are certainly other observational studies that provide a broader caseload, such as the IRAD (International Registry of Acute Aortic Dissection) and the RESA (Spanish Acute Aortic Syndrome Study). However, it is often inadequate to compare the results to form opinions and adopt behaviors in the context of the reality of medical care in emerging countries.

Therefore, the merit of this Argentine multicenter study lies in the characterization of health care reality in medical centers that do not belong to first world countries. Once the amount of information and behaviors are standardized, the need to expand the RADAR Study to other Argentine or South American centers is a possible suggestion. With this, and due to the increased number of cases, it is expected to assess a national reality that is not limited to major medical centers in Buenos Aires, but that points to a sense of reality in South America.

Undoubtedly, uniform decisions must be taken regarding normalization of behaviors (algorithm) for those patients in all emergency health care centers.

In the methods of diagnosis of the RADAR Study, it is worth mentioning the high sensitivity of transthoracic echocardiography (83%) and the low sensitivity of the CT scan (85%), unlike previous reports, in which sensitivity for the diagnosis of AAS was 65% and 98%, respectively. However, there is a large number of coronary angiographies performed, which is uncommon for AAS, as well as the need, in 21% of the cases, to associate a transthoracic and a transesophageal echocardiography as a method of choice to confirm the diagnosis.

Undoubtedly, surgery is required in the case of Stanford Type A AAS. By contrast, in the case of Type B AAS, further research has to be done, especially because of the lack of consensus on behaviors in the literature. It is necessary to clarify the differences be-

tween the complex type B AAS and the non-complex type B AAS, as well as when and how to perform surgery. The types of interventions implemented must be adopted uniformly so that an homogeneous sample of behaviors can be obtained, and results show consistent and accurate conclusions.

As it can be seen, 11% of acute proximal dissections were not treated with surgery, a decision that is justified only in clinical coma, mesenteric necrosis, or refusal of patients or their relatives to surgery. Will there have been difficulties in favor of surgery when dealing with these patients? Will the refusal have been for fear of adverse surgical outcomes?

In-hospital mortality rate due to proximal dissections in surgical and non-surgical patients was 31% and 87.5% respectively; this result differs from those from IRAD (26%) and RESA (33% and 71%).

Aortic valve replacement associated with interposition of supracoronary tube was the surgical procedure most commonly used (50% of surgical patients). This procedure is not the most commonly used for a proximal AAS, since, despite the high incidence of aortic regurgitation (50-60% of the patients), this condition is caused by misalignment or displacement of the aortic valve leaflets. Simple correction of the delamination is enough to recover valve competence, without replacing it. In general, the need for valve replacement in the acute phase is associated with the dissections that occur as evolutive complication of the annuloaortic ectasia. In these cases, the method chosen is the Bentall/de Bono technique (37% of the sample). It remains to determine if the high rate of aortic valve replacement is the result of the overestimation of valve incompetence or the high degree of primary valve involvement observed in patients from this specific sample.

In the RADAR Study for the type B AAS, interventions were performed in 60% of the cases: conventional surgery (15%), surgical aortic fenestration (10%) and stent placement (35%), a very high figure if one takes into account that it is necessary to agree upon the treatment of complex type B, which represents the minority of the cases. Maybe more procedures than necessary are being performed. It is necessary to conduct a preliminary analysis on the uniformity of behaviors to which the participating centers must adhere carefully, so that conclusions can be drawn on the basis of current knowledge. In the IRAD, only 82 (6.5%) out

¹ Division of Cardiovascular Surgery, Institute of Cardiology of the School of Medicine of the University of San Pablo
Revista Argentina de Cardiología / _vd_77_n°_5 / sip eimbii_dc ubii_2009

of 1,256 patients were referred for surgery. Moreover, in the RESA, 34% of the patients underwent surgery: 11% with conventional surgery and 23% through an endovascular treatment with stent.

It is clear that continuing education is key, led by the Argentine Society of Cardiology for its cardiologists and emergency physicians. It is also necessary to reinforce the importance of early diagnosis of AAS, namely the importance of always linking it to precordial or chest pain, since, on this basis, it will take less time to make a diagnosis and administer an adequate therapy. As a result, the use of inadequate antithrombotic or thrombolytic therapy will be reduced, which can sometimes delay the convenient procedure and thus shorten the life of many patients.

BIBLIOGRAPHY

1. Estrera AL, Miller CC, Goodrick J, Porat EE, Achouh PE, Dhareshwar J, et al. Update on outcomes of acute type B aortic dissection. *Ann Thorac Surg* 2007;83:S842-5.
2. Evangelista A, Padilla F, López-Ayerbe J, Calvo F, López-Pérez JM, Sánchez V, et al. Spanish Acute Aortic Syndrome Study (RESA). Better diagnosis is not reflected in reduced mortality. *Rev Esp Cardiol* 2009;62:255-62.
3. Hagan P G, Nienaber CA, Isselbacher EM, Bruckman D, Karavite DJ, Russman PL, et al. The International Registry of Acute Aortic Dissection (IRAD): new insights into an old disease. *JAMA* 2000; 283:897-903.
4. Higa C, Guetta J, Borracci RA, Meribilhaa R, Marturano MP, Marenchino R, Benzádon M, Comignani P, Botto F, Fuselli JJ. Registro Multicéntrico de Disección Aórtica Aguda. Estudio RADAR. Resultados preliminares. *Rev Argent Cardiol* 2009;77:354-60.
5. Nienaber CA, Eagle KA. Aortic dissection: new frontiers in diagnosis and management: Part I: from etiology to diagnostic strategies. *Circulation* 2003;108:628-35.
6. Trimarchi S, Nienaber CA, Rampoldi V, Myrmet T, Suzuki T, Mehta RH, et al. The International Registry of Acute Aortic Dissection Experience. Contemporary results of surgery in acute type A aortic dissection: The International Registry of Acute Aortic Dissection Experience. *J Thorac Cardiovasc Surg* 2005;129:112-22.
7. Tsai TT, Nienaber CA, Eagle KA. Acute aortic syndromes. *Circulation* 2005;112:3802-13.
8. Tsai TT, Trimarchi S, Nienaber CA. Acute aortic dissection: perspectives from the International Registry of Acute Aortic Dissection (IRAD). *Eur J Endovasc Surg* 2009;37:149-59.