

Commentary

The article by Sodhi *et al.*^[1] presents the problems faced and the results achieved in the management of patients with ruptured intracranial aneurysms in a tertiary care center in North India at the present time. The study is based on a clinical/radiological evaluation of 482 patients consecutively admitted to this neurosurgical unit over a period of 10 months; this certainly represents an enormous case load for a single center, considering that very few centers in the so-called “developed” countries treat more than 80-100 patients with ruptured aneurysms per year, and that the incidence of subarachnoid hemorrhage in the population is thought to be around 6-10 cases over 100,000 per year.^[2] It should be added that the

exclusion of the aneurysm is only one aspect in the overall management of these patients, since many other problems have to be faced, such as prevention (and possibly treatment) of delayed ischemia, treatment of increased intracranial pressure, and avoidance/treatment of medical complications, all conditions encountered in this pathology, and especially in poor grade patients.^[3,4]

With the above premises, a reasonable philosophy in a developing country with such a case load per center is to treat surgically only patients who are in good grade at admission, since these patients have a significantly higher chance of surviving and a significantly lower

disability rate as confirmed by the present study. Following this approach, 333 patients - mostly in WFNS grades 1-3 at admission (85%) - underwent definitive surgical (or endovascular) exclusion of the aneurysms at this Center, while 152 patients - mostly in WFNS grades 4-5 at admission (82%) - were managed conservatively. The resulting mortality was 27% in the first group and 86% in the second group. WFNS grade (together with hypertension) confirmed to be the most significant predictor of poor outcome at multivariate analysis.

While complimenting the authors for their effort in managing this multitude of patients with reasonably good results (at least in the first group), in principle, we cannot justify this policy that goes against what we have learned in the last 2 decades, following the publication of the Cooperative Study on Timing of Aneurysm Surgery by Kassell *et al.* in 1990.^[5] This study revealed that a delayed policy in treatment of ruptured aneurysms is linked with a significantly worse prognosis in terms of overall management. Since then, adoption of early surgical (or endovascular) occlusion of aneurysm (within 3 days of hemorrhage) has led to improvement in overall results.^[6] Patients in WFNS grade 5 on admission (not harboring a significant hematoma) may constitute the only exception to a rule of aggressive treatment and early aneurysm exclusion. Thus, the decision to follow a conservative treatment in one-third of patients admitted to this tertiary care center in India remains controversial, considering that only 31% of patients in the "Non-Intervention Group" were WFNS grade 5. The very high mortality rate reported in this group is only partially explained by a poor neurological grade on admission, because a conservative attitude is linked with a high incidence of re-bleedings and other complications as stated by the Cooperative Study. In particular, when dealing with grade 4 patients, clinical improvement may take weeks; in the meantime - if untreated - these patients face a high risk of re-bleeding,^[7] especially after 15-20 days from initial bleeding.

Even considering the significant burden that subarachnoid hemorrhage from aneurysmal rupture may represent for the health care system of an emerging country, we still believe that every effort should be made to exclude the bleeding aneurysm within 3 days of hemorrhage in all patients (possibly excluding WFNS grade 5 patients); we fully agree that the preference should go to direct surgery, owing to the significant expenses for coil embolization and demonstrated efficacy of surgical clipping for most aneurysmal locations in the anterior circulation.

At the end, our medical colleagues - in India as in other emerging countries - are facing a fundamental dilemma: (a) To follow the philosophy of treatment proposed in this paper, accepting the actual constraints in the health care system, or (b) to strongly promote the expansion of the actual resources in this particularly critical field of medicine, with an increase in the number of tertiary care centers (meaning decreased case load per center), and with the development of adequate training programs in vascular neurosurgery. It is our hope that the second alternative will be chosen in the near future in India as well as in other emerging countries.

Vincenzo Marafioti, Alberto Pasqualin¹

Department of Cardiovascular and Thoracic, Institute of Cardiology,
¹Institute of Neurosurgery, University Hospital of Verona, Verona, Italy

Address for correspondence:

Dr. Vincenzo Marafioti,
Department of Cardiovascular and Thoracic, Institute of Cardiology,
University Hospital of Verona, P. Stefani 1, Verona - 37126, Italy.
E-mail: vincenzo.marafioti@fastwebnet.it

References

1. Sodhi HB, Savardekar A, Mohindra S, Chhabra R, Gupta V, Gupta SK. The Clinical profile, management and overall outcome of aneurysmal subarachnoid hemorrhage at the neurosurgical unit of a tertiary care center in India. *J Neurosci Rural Pract* 2014;5:118-26.
2. Van Gijn J, Rinkel GJ. Subarachnoid haemorrhage: Diagnosis, causes and management. *Brain* 2001;124:249-78.
3. Mocco J, Ransom ER, Komotar RJ, Schmidt JM, Sciacca RR, Mayer SA, *et al.* Preoperative prediction of long-term outcome in poor-grade aneurysmal subarachnoid hemorrhage. *Neurosurgery* 2006;59:529-38.
4. Siddiq F, Chaudhry SA, Tummala RP, Suri MF, Qureshi AI. Factors and outcomes associated with early and delayed aneurysm treatment in subarachnoid hemorrhage patients in the United States. *Neurosurgery* 2012;71:670-8.
5. Kassell NF, Torner JC, Haley EC Jr, Jane JA, Adams HP, Kongable GL. The international cooperative study on timing of aneurysm surgery. Part 1: Overall management results. *J Neurosurg* 1990;73:18-36.
6. De Gans K, Nieuwkamp DJ, Rinkel GJ, Algra A. Timing of aneurysm surgery in subarachnoid hemorrhage: A systematic review of the literature. *Neurosurgery* 2002;50:336-42.
7. Hillman J, Fridriksson S, Nilsson O, Yu Z, Saveland H, Jakobsson KE. Immediate administration of tranexamic acid and reduced incidence of early rebleeding after aneurysmal subarachnoid hemorrhage: A prospective randomized study. *J Neurosurg* 2002;97:771-8.

Access this article online	
Quick Response Code:	Website: www.ruralneuropractice.com
	