# **Childhood Ischemic Stroke:** a not infrequent disease

M. Pandolfi, C. Tucci, S. Graziano, M. F. de Leva, A. Varone, M. L. Cimaglia, S. Buono S.C. Pediatric Neurology - Santobono Pausilipon Children's Hospital - NAPLES

#### **Objectives**

To describe causes and treatments of 7 cases of Ischemic Stroke in Children.

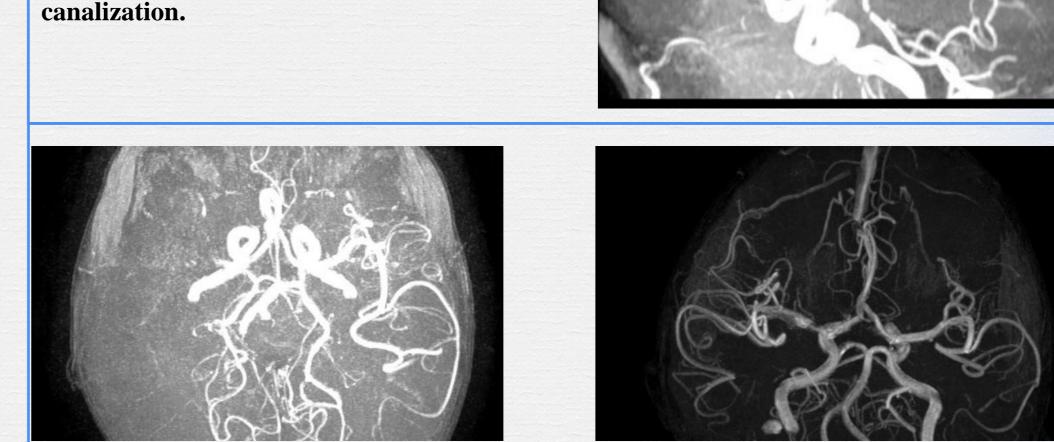
### **Patients and Methods**

**Case 1:** a 1 year-old white male was admitted to our hospital for fever, unbearable weeping, left upper limb paresis and left facial paresis; the MR Study showed a posterior acute ischemic stroke with basilar thrombosis; thrombectomy was performed with partial success; serum biochemical parameters analyses showed IgM Anti-Mycoplasma. **Case 2:** a 3 years-old white male, with history of chickenpox 4 weeks before, was admitted to our hospital for clones to the left emilate and postcritical paralysis. The MR study showed an ischemic stroke in the territory of the right ACM with a stop to the M1tract; thrombectomy was performed whithin six hours from the arrival at the hospital with serum biochemical parameters analyses showed success; heterozygous for prothrombin G20210A. **Case 3:** a 5 years-old white male was admitted to our hospital for right hemiparesis with onset 24 hours before. The MR Study showed an ischemic stroke in the territory of left ACM with a stop to the M3-M4 tract; transesophageal echocardiogram showed Patent Foramen Ovale (PFO) then corrected. **Case 4:** a 6 years-old black female, affected by sickle cell anemia, was admitted to our hospital for clones to the right emilate; the MR Study showed an ischemic stroke that involved both territory of the ACM and imaging Moyamoya like; during the hospitalization she presented a generalized tonic-clonic crisis: the TC study showed an hydrocephalus with parenchymal and ventricular hemorrhage: a peritoneal ventricular derivation was required.

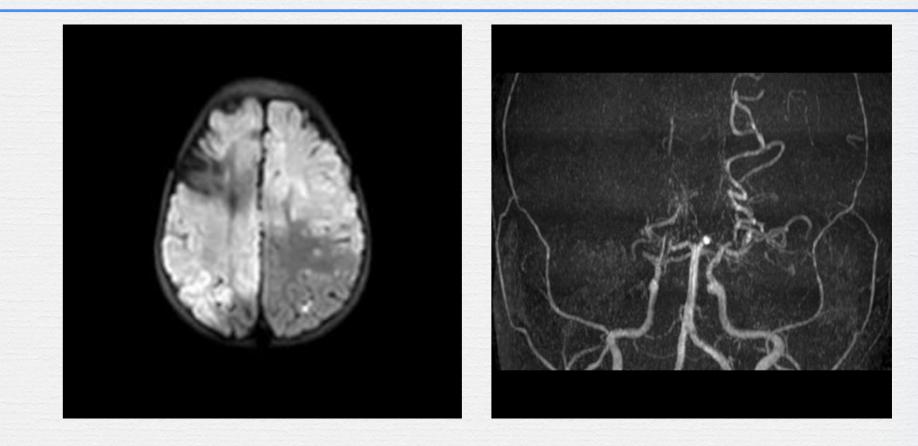


RM Study showed basilar thrombosis. **Right: RM Study performed after** thrombectomy with basilar partial

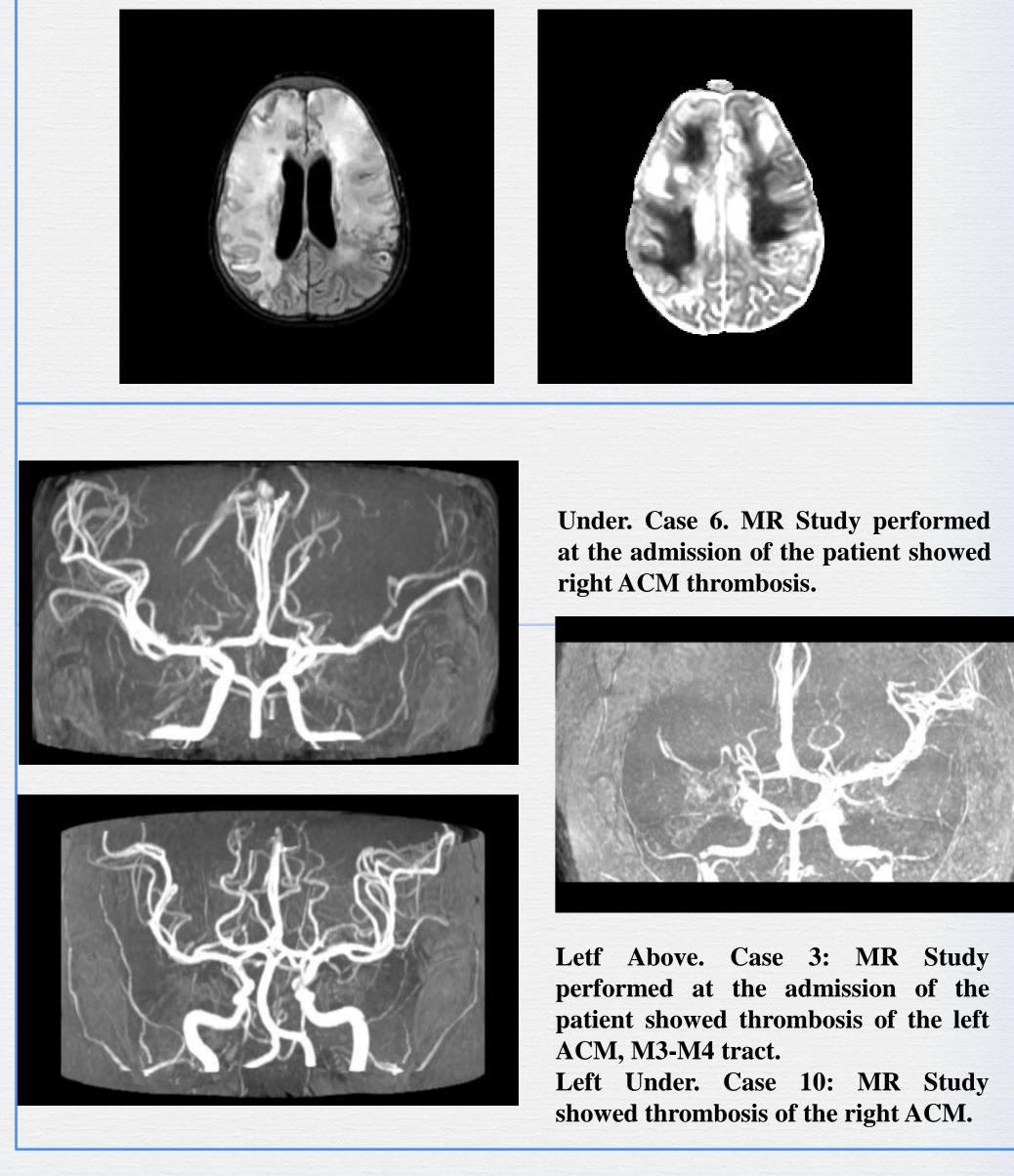
**Case 5 and 6:** a 5 and a 9 years-old, whites females, with history of flu, were admitted to our hospital for acute onset of left hemiparesis; in both the MR study showed an ischemic stroke in the territory of the right ACM and serum biochemical parameters analyses showed IgM anti-EBV. **Case 7:** a 10 years-old white male was admitted to our hospital for headache; during hospitalization acute onset of left hemiplegia; the MR Study showed an ischemic stroke in the territory of right ACM; transesophageal echocardiogram showed PFO then corrected.



Case 2. Left: MR Study performed at the admission of the patient showed right ACM-M1 thrombosis. Right: RM Study after thrombectomy shomed recanalization right ACM.



Case 4. Above: MR Study performed at the admission of the patient showed an ischemic stroke that involved both territory of the ACM. Under: MR Study control 20 days after onset.



## **Discussion and Conclusions**

Childhood Ischemic Stroke is not rare. The most frequent causes are infections, congenital heart diseases, PFO, thrombophilia, genetic and metabolic disorders. The acute treatment with thrombolisys iv and thrombectomy is not standardized but scientific evidences and our experience suggest that these treatments would be useful also in children with few risks, both quod vitam and quod valietudinem.

#### References

- Gerstl L, Olivieri M, Heinen F, Borggraefe I, Schroeder AS, Tacke M, Vill K, Dalla-Pozza R, Reiter K, Lutz J, Brueckmann H, Janssen H. Successful mechanical thrombectomy in a three-year-old boy with cardioembolic occlusion of both the basilar artery and the left middle cerebral artery. Eur J Paediatr Neurol. 2016 Nov;20(6):962-965.
- Rivkin MJ, deVeber G, Ichord RN, Kirton A, Chan AK, Hovinga CA, Gill JC, Szabo A, Hill MD, Scholz K, Amlie-Lefond C. Thrombolysis in pediatric stroke study. Stroke. 2015 Mar;46(3):880-5.
- Nasr DM, Biller J, Rabinstein AA. Use and in-hospital outcomes of recombinant tissue plasminogen activator in pediatric arterial ischemic stroke patients. Pediatr Neurol. 2014 Nov;51(5):624-31.





