

Stroke in Newborns and Infants: What Etiology?

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Hemiparesis in the newborn can have diverse etiologies that can act alone or in combination. Strokes are very rare in children with an estimated incidence of 1/100000 per year. They have a multifactorial etiology (Table 1). In pregnancy, the risk of venous thromboembolism during gestation and puerperium is between 1 and 3% compared to a baseline risk of 0.08%. There is also a physiological increase in maternal blood procoagulant activity: elevation of factors VII, X, VIII, fibrinogen, von willebrand, inhibitor of placental-derived plasminogen activator (PAI-2) and D-dimers. On the other hand, there is a decrease in anticoagulants (significant reduction of protein S activity and acquired resistance to protein C activity). In addition to the state of hypercoagulability inherent to pregnancy, there may be associated maternal thrombophilia or other risk factors which increase the risk of thromboembolism considerably. Deficiency of ATIII, Protein C and Protein S are the factors risk commonly associated with venous thromboembolism during pregnancy. Maternal thrombophilia allows thrombosis of decidua and placental infarctions with consequent change in placental circulation, low blood perfusion. Hereditary thrombophilia, when present, is associated with increased complications in pregnancy such as venous thromboembolism.

ATIII deficiency	Increase of lipoprotein	Plasminogen deficiency	Labor traumatism
Protein s deficiency	Homozygous polymorphism of MTHFR	Increase of PAI	Homocystinuria
Protein c deficiency	Increase of FVIII	Infection	Arteriovenous lesions/malformations
FV G1691A mutation	Dysfibrinogenemia	Asphyxia	Dehydration
Protrombin gene mutation 20210A	tPa deficiency	Sickle cell anemia	Collagen anomalies
Prepartum risk factors	Preeclampsia	IUGR	Congenital metabolic disorders
Gestational Diabetes	Drugs abuse	Congenital heart malformations	Acquired venous thrombosis

Table 1: Stroke etiology in newborns and infants.

If we find an etiology, we can prevent and avoid stroke episode in future pregnancies.

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