# Mapping Anticoagulation Practices in Neonatal and Pediatric ECMO: Insights from Latin America


## Authors and Affiliations

Gabriela Carvalho[1,2], Janaina Moura[1,2], Rafael Garcia[1], Luiz Forgiarini[3] , Tiago N Machuca[2], Larissa Gondim[5], Luiz Fernando Caneo[4], Beatriz Furlanetto[6], Fernando Antonialli[7], Carolina Campos[8], Desiree S Machado[2,3]

1. São Luiz Children's Hospital, Rede D'Or, São Paulo, SP, Brazil
2. São Luiz Itaim Hospital, Rede D'Or, São Paulo, SP, Brazil
3. Institute D'Or for Research and Education, IDOR, São Paulo, SP, Brazil
4. Heart Institute, InCor, São Paulo, SP, Brazil
5. Samaritano Paulista Hospital, São Paulo, Brazil
6. Sabará Children's Hospital, São Paulo, Brazil
7. Pontifical Catholic University of Campinas, Campinas, Brazil
8. CardioPedBrasil, Children's Hospital and Maternity Center of São José do Rio Preto, Brazil

**Background**: Optimal anticoagulation during extracorporeal membrane oxygenation (ECMO) remains one of the greatest challenges in neonatal and pediatric critical care. Although unfractionated heparin remains the standard anticoagulant, monitoring strategies and transfusion practices vary considerably. Data describing anticoagulation practices across Latin American ECMO programs are scarce.

**Objectives**: To characterize anticoagulation management, monitoring strategies, transfusion practices, and the use of direct thrombin inhibitors (DTIs) among neonatal and pediatric ECMO centers in Latin America.

**Methods**: A cross-sectional survey was conducted among Latin American ECMO programs. Twenty-five centers from eight countries participated: Brazil (n=9), Colombia (n=6), Chile (n=3), Argentina (n=2), Mexico (n=2), Peru (n=1), Panama (n=1), and Costa Rica (n=1). Survey domains included anticoagulant selection, monitoring modalities, laboratory surveillance, transfusion thresholds, anticoagulation protocols, and experience with DTIs.

**Results**: Most centers (88%) operated 1–10 ECMO beds and primarily managed cardiac intensive care patients. Unfractionated heparin was the universal first-line anticoagulant, with all programs administering a heparin bolus during cannulation. Continuous heparin initiation and monitoring strategies demonstrated substantial variability, with activated clotting time targets ranging from 140–220 seconds and 40% of centers relying primarily on activated partial thromboplastin time. Written anticoagulation protocols were available in 88% of institutions. Anti-factor Xa monitoring targets varied, although therapeutic ranges of 0.2–0.5 IU/mL and 0.3–0.7 IU/mL were most frequently reported. Laboratory monitoring intervals and transfusion thresholds also differed considerably between programs. DTIs were used by only four centers (16%), primarily for heparin-induced thrombocytopenia or difficult anticoagulation management. Limited drug availability (52%) and cost (20%) were the main barriers to adoption. Despite limited clinical experience, 76% of centers expressed willingness to participate in a multicenter clinical trial comparing bivalirudin with heparin in neonatal ECMO.

**Conclusion**: Neonatal and pediatric ECMO programs in Latin America demonstrate universal heparin use but substantial heterogeneity in anticoagulation monitoring and transfusion practices. The limited adoption of DTIs, coupled with strong interest in collaborative research, highlights an important opportunity to develop regional consensus guidelines and prospective multicenter trials to standardize anticoagulation management.

**References**


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