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Balloon Atrial Septostomy performed 'out-of-hours': Effects on the outcome

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Background: Balloon atrial septostomy is a common palliative procedure in neonates with cyanotic congenital heart disease with restricted interatrial blood flow. Despite its advantages, balloon atrial septostomy is not a risk-free procedure and can be associated with numerous complications. The objective of this study is to determine whether the performance of this procedure out-of-hours has a significant impact on the incidence of adverse outcome measures.

Methods and Results: 106 neonates who underwent balloon atrial septostomy between 2004 and 2010 were studied retrospectively. 64 infants had the procedure done within routine hours (9.00-18.00), while 42 neonates underwent the procedure out-of-hours (18.01-8.59). Procedure-related complications occurred in thirty-two infants (30.2%), which included (12/64 (18.8%) in routine hours and 20/42 (47.6%) in the out-of-hours group). During further follow-up after surgery and including both major and minor adverse events, seven more infants (10.9%) suffered complications after balloon atrial septostomy in the routine hours group while four more infants (9.5%) suffered complications in the out-of-hours group. This totalled the complication rate in the routine hours group to nineteen infants (29.7%) and twenty-four infants (57.1%) in the out-of-hours group ($P= 0.001$). A higher overall mortality rate was also noted in the out-of-hours group.

Conclusions: Balloon atrial septostomy performed out-of-hours produced higher complication rates as opposed to balloon atrial septostomy performed during routine hours. Only essential cases should be undertaken in the night, while all other cases should be deferred to the daytime to limit unnecessary adverse complication.