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How Nitric oxide plays an important role in changing aggressive behavior in patients with pulmonary artery hypertension after correction of congenital heart surgery in ICU

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Objective: To evaluate the association between the use of nitric oxide in the pulmonary arterial hypertension (PAH) and the level of aggression in children with acyanotic congenital heart diseases and especially to evaluate the development rates of aggressive behaviors in ICU setting in patients with borderline PAH after correction of congenital heart surgery.

Methods: The study was performed with data of 327 patients with acyanotic congenital heart diseases and underwent open heart surgery between January1984-February1995. The design of the study was retrospective and observational. All the patients in this case were given nitric oxide in a controlled manner. The patients were observed before surgery to have aggressive behavior. All patients were evaluated with observational methods. They were classified according to the mean pulmonary artery pressure and level of the surgery. Chi-square, ANOVA tests were used for statistical analysis.

Results: The patients were analyzed before coming to ICU before the surgery by observational method. The patients were observed in the field of nitric oxide was detected in 94.8% of patients with PAH and 17.2% of no PAH patients after giving them nitric oxide A negative association was detected between mean pulmonary arterial pressure and body weight for age and z scores of weight ($p<0.001$ for all). Z scores of weight and height were significantly decreased in patients with PAH in contrast to no PAH group ($p<0.001$, $p<0.01$ respectively). There was no statistical difference between no PAH and borderline PAH groups according to this study and relative body weight formula, however z scores of weight in borderline PAH group were decreased compared with no PAH group ($p<0.001$). The use of nitric oxide in ICU setting finds an important role. The use of nitric oxide showed that the aggression level after the surgery was less as compared before the surgery.

Conclusion: A positive association was detected between the use of nitric oxide in ICU setting and the degrees of PAH and level pulmonary hypertension in children with a cyanotic congenital heart disease with open heart surgery. There should be more study in this field and the proper experimental study should be done to further evaluate this study

Biography

Soumen Acharya is working as Consultant at National Institute of Public Cooperation and Child Development New Delhi, India. Previously, he worked as Supervising Officer at All India Institute of Medical Science for 21 years' and also worked in New Zealand. He published many papers in a leading journal. He is the Life Member of organizations like: Social Psychiatry in India and Fellow of Social Psychiatry of India.

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