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Twice daily dosing of indomethacin is more effective in PDA closure compared to daily Indomethacin or Ibuprofen

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Objective: To determine whether ibuprofen or indomethacin, and which dosing interval of indomethacin, is most effective in achieving closure of a patent ductus arteriosus (PDA), and if there is a difference in complication rates.

Study Design: In this study, 257 infants were retrospectively reviewed and divided into 1 of 3 treatment groups: daily ibuprofen, daily and twice daily indomethacin. One course of treatment was given over 3 days. Chi-squared and Wilcoxon tests were used.

Results: Twice daily indomethacin, ibuprofen, and daily indomethacin had PDA closure rates of 76%, 60% and 57% respectively. When compared to both ibuprofen and daily indomethacin, twice daily indomethacin use resulted in a higher closure rate ($p=0.019$, $p=0.012$ respectively) and this comparison held true when controlling for gestational age. Ibuprofen and daily indomethacin had similar closure rates ($p=0.661$). An increase in NEC was seen in the daily indomethacin group as compared to the ibuprofen group ($p=0.194$). Otherwise there was no significant difference in gastrointestinal perforation, bronchopulmonary dysplasia, intraventricular hemorrhage, or mortality.

Conclusion: A 6 dose course of twice daily dosing of indomethacin is significantly more effective at achieving PDA closure compared to a 3-dose course of daily dosing of either indomethacin or ibuprofen, with an increase in NEC rates seen in twice daily indomethacin.

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