

## **Management of the Premature Patent Ductus Arteriosus and Impact on Catheter Intervention**

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### Background:

Premature infants are at risk for the persistence of a patent ductus arteriosus (PDA). Although some PDAs may close over time, a PDA may cause cardiopulmonary complications if persistent. In recent years, management of PDAs has become more conservative, preferring observation over treatment in the clinically stable patient. We hypothesized that conservative PDA management has resulted in an increased number of PDA closures in the catheterization lab.

### Methods:

The neonatology database for Children's Hospital and Medical Center Omaha was retrospectively searched for premature infants diagnosed with a PDA within two treatment eras: 2009-2011 representing the definitive PDA (d-PDA) management era and 2014-2016 representing the conservative PDA (c-PDA) management era. Charts were reviewed to determine method of treatment or spontaneous closure of the PDA.

### Results:

There were 123 and 128 patients from the d-PDA and c-PDA eras, respectively. Medical treatment was offered to 48 and 23 patients in the d-PDA and c-PDA eras, respectively ( $p < 0.01$ ). There was no significant difference in surgical ligation with 32 and 36 patients in the d-PDA and c-PDA eras, respectively ( $p = \text{NS}$ ). No treatment was given to 43 and 69 patients from the d-PDA and c-PDA eras, respectively ( $p = 0.02$ ). Of those, 1 and 6 patients were treated by catheter intervention in the d-PDA and c-PDA eras, respectively ( $p = \text{NS}$ ). It was noted that in the c-PDA era, all six patients were treated prior to discharge suggesting earlier intervention age. Spontaneous closure rate was 56% and 65% for d-PDA and c-PDA eras, respectively ( $p = \text{NS}$ ).

### Conclusion:

There is a significant decrease in patients medically treated for PDAs in our center when comparing the d-PDA and c-PDA eras. Spontaneous closure and surgical ligation rates remain equivalent among the two eras. Although there was an increase in catheter intervention during c-PDA, this did not meet statistical significance when compared to d-PDA.