

# CHAPTER 7

## PATENT DUCTUS ARTERIOSUS: A PRACTICAL CLINICAL APPROACH

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### INTRODUCTION

Ductus arteriosus is a critical vascular structure during fetal life for maintaining fetal systemic blood flow that connects the descending aorta and the pulmonary artery [1]. Persistent patency of the ductus arteriosus (PDA) after birth may cause significant clinical outcomes related to the left to the right shunt and is one of the most common lesion of congenital cardiac diseases with a prevalence of 5-10% [2].

With the widespread use of echocardiography, the rate of PDA diagnosis has been increased, recently. However, it is still a great challenge for physicians to decide which PDA is harmful and needs treatment. Moreover, management strategies are changing and developing day by day and there is still not a worldwide consensus.

This review focused on the key aspects of PDA management and providing the latest recommendations about this subject at all ages

### PDA in preterm infants

As the normal mechanism of ductal closure does not function effectively in preterm infants, patent ductus arteriosus is common and its incidence is inversely correlated to the gestational age of the baby. While PDA incidence is about 20% in premature babies born in the 32nd week of pregnancy, it is seen in 80-90% in extremely low birth weight babies with a gestational age below 26 weeks[3].

Because of the association with PDA and numerous morbidities in preterms, such as necrotizing enterocolitis, renal impairment, pulmonary haemorrhage, bronchopulmonary dysplasia, intraventricular haemorrhage, medications, including cyclooxygenase inhibitors and surgical ligation are frequently used in clinical practice as ductal closure treatments [4].

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'Silent PDA' is defined as incidentally diagnosed PDA by echocardiography in the absence of typical murmur [17, 21].

While hemodynamically significant PDA often requires treatment, silent PDA can be occasionally a cause of infective endocarditis, especially in older ages and there is still debate in terms of closure of silent PDA [21].

## **Conclusion**

Ductus arteriosus is an important vascular structure during fetal life. However, if persists after the early neonatal period, significant problems can occur. Thus, to make the decision of treatment is important and in preterms, medical closure, in symptomatic patients of all ages, transcatheter or surgical closure is recommended.

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