

## Transient Atrial Flutter in Premature Infants

### To the Editor:

A preterm newborn of 34 weeks gestational age and birth weight of 1900 g was referred for a cardiology evaluation due to having a tendency to tachycardia since birth (heart rate approximately 160 beats/min) without tachycardic stimulants. From his sixth day of life, he frequently experienced a heart rate over 190 beats/min with no haemodynamic repercussions. On ECG (Figure) we observed P-waves indicating atrial tachycardia/flutter with a 2:1 conduction pattern, which were more apparent following a therapeutic test with adenosine. The echocardiogram was normal except for a small patent foramen ovale.

Treatment was started with digoxin, and the rhythm was normalised within 24 h (sinus rhythm). Digoxin was discontinued after 72 h and the patient remained under observation during the stay, but the flutter did not reappear. To date, the patient has remained asymptomatic.

Atrial flutter, which is well-known (the first studies were published in the early 1930s<sup>1</sup>), is not a frequent disease in neonatal units, although it constitutes 1%-2% of foetal arrhythmias and is the second most common tachyarrhythmia with heart failure in this period.<sup>2</sup> It can cause symptoms in the foetal period (hydrops foetalis, death) and also in the newborn period, with variable morbidity. Its clinical profile depends on the duration of the arrhythmia.<sup>3</sup> It is thought that the immaturity of the myocardium and the high pressure in the right atrium during the perinatal period are factors that favour the appearance of atrial re-entry, which would cause flutter in the foetus or the newborn.<sup>2,3</sup> Newborns with

atrial flutter are frequently asymptomatic, and in most patients it begins as asymptomatic tachycardia, although in up to 20% it may present with heart failure.<sup>3-5</sup> Conversion to sinus rhythm is considered the treatment for these patients (drugs, synchronized cardioversion, pacemakers). Administering medications such as adenosine triphosphate is safe and has been safely used in premature infants, including the extremely pre-term, and it will be the first option if there is no haemodynamic instability.<sup>6</sup> We must keep in mind that some patients can revert spontaneously, which often happens a few hours after diagnosis. Maintenance treatment will not be necessary when the flutter spontaneously reverts to sinus rhythm, or when it responds easily to electrical conversion to sinus rhythm.<sup>2-5</sup>

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**Figure.** ECG: image of flutter with sawtooth P-waves and 2:1 conduction pattern which is more apparent after treatment with adenosine.