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**Acute Neonatal Hypertensive Crisis With Circulatory Failure:  
Be Aware Of The Wolf In Disguise**

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**BACKGROUND:** Acute arterial hypertension with circulatory failure in the neonatal period is rare and poorly understood. Delay of correct treatment could lead to grave long-term consequences or even death.

**METHODS:** Retrospective study from 2007-2010 at our tertiary Neonatal and Cardiology Centre; all patients presented in circulatory failure at an age < 14days; with arterial hypertension and secondary LV dysfunction without aortic malformation.

**RESULTS:** Six cases were identified; 5 term patients (age 7±2 days, PMA 40.0±1.6w, BW3650± 562 g) and 1 premature (D7,PMA 28 weeks, BW 860g). All patients presented with circulatory failure due to a renin-angiotensin-aldosterone system mediated hypertensive crisis. All needed respiratory support and had increased lactate levels (median 2.25mmol/l, range 1.4-11.0). Renal function was normal in 2/6 cases. Cardiac findings: LV FS 27% (range 10-30%); mild to moderate Aortic Regurgitation(AR) in all (grade 2/4 in 1); mild to moderate Mitral Regurgitation (MR) in all (grade MR >2/4 in 2); Tricuspid Regurgitation(TR) grade 2/4 in 3. LV thickness was normal in 3, mild hypertrophy in 3. One patient with severe dysfunction FS 17% had 2 large apical thrombi. At presentation 4 pts had hypertension, 1 hypotension, 1 normotensive. In 2 cases hypertension only became obvious after restoration of output.

Administration of IV milrinone was successful with rapid improvement of the clinical condition. High aldosterone (median 2396ng/l) and renin (median 23.5µg/l/hr) were present in all patients. LV and mitral function normalized in all; residual AR <1/4 in 2pts. One pt has an abnormal renal function; 2pts need anti-hypertensives.

Predisposing factors for renal thrombi were present in 2 pts with an arterial umbilical catheter and thrombus formation (1 with renal infarction).

**CONCLUSION:**

1. Early neonatal circulatory failure due to arterial hypertension is rare.
2. The combination of LV dysfunction and central aortic regurgitation in a structurally normal heart, should alert for arterial hypertensive crisis.
3. Renin-angiotensin-aldosterone system mediated hypertensive crisis is most frequent.
4. At presentation, hypotension (with dysfunctional LV) does not exclude a hypertensive crisis.
5. Early recognition and urgent treatment is crucial.
6. Cardiac long-term outcome appears good, renal outcome is variable.