



Atrial Activity and Cardiovascular Response to Stress in Triplets: Short Case Report

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Using high-resolution electrocardiography (HRE), we have previously examined the morphological aspects of the atriogram in a set of DZ triplets comparing the MZ and the DZ pairs [3]. We now repeated the recordings on the triplets, three years after the first studies, in order to evaluate the individual morphological reproducibility of the atriogram and the cardiovascular response to effort and to stress by means of provocative tests [1-3].

We studied a set of female DZ triplets aged 15 years, born normally at the 39th week of gestation, with two chorions and three amnions. We compared the responses to the individual provocative tests, and repeated the analysis of the atriograms after three years. We therefore used the HRE, the Bruce protocol ergometric test, and the sympathetic stimulation tests: handgrip test, cold pressure test, arithmetic mental test (Table).

The HRE tracings showed a distinct similarity of the atriogram, between two of the dichorial triplets and a modest difference between the two monochorial partners. The values were normal for all three triplets even if the atriogram of the dissimilar MZs presents a more elementary morphology. Moreover, the tracings made at an interval of three years show a distinct individual atrial repetitivity for each triplet.

As far as the effort and sympathetic stimulation test are concerned, dichorial partners showed greater tolerance to effort and a more accentuated response to the provocative tests than the monochorial partners. One triplet also showed greater tolerance to effort and a more accentuated response to cold pressure test, handgrip test and arithmetic mental test, than her MZ sister.

Such data confirm the existence of a hemodynamic fetal suffering of one of the monochorionic triplets as opposed to her dominant cotwin.

Table - Results of tests performed in the triplets

	Monochorionic (MZ) partners		Separate chorion partner
	1	2	
TST			
Elapsed time	10'6	10'7	12'5
HR max	201	200	197
HGT			
HR max	128	129	132
BSP (mm Hg)	150	130	135
CPT			
HR max	113	105	106
BSP (mm Hg)	140	130	135
MST			
HR max	130	133	132
BSP (mm Hg)	150	140	125

TST: Treadmill stress test

HGT: Handgrip test

CPT: Cold pressure test

MST: Mental stress test

HR: Heart rate

BSP: Blood systolic pressure

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