

**Tab. 1a.** Leading cardiovascular diagnosis in patients of group 1 (mWHO III-IV)

	mWHO class	n
Pulmonary arterial hypertension	IV	3
Severe systolic dysfunction of the systemic ventricle <sup>1</sup>	IV	3
Asymptomatic severe aortic stenosis	III	3
Mechanical valvular prosthesis, oral anticoagulation	III	2
Status after ICD implantation for secondary prevention <sup>2</sup>	III	2
Moderate systolic dysfunction of the left ventricle	III	2
Fontan circulation without complications	III	1
Aortic aneurysm, severe asymptomatic aortic regurgitation	III	1

<sup>1</sup> – 1× dilated cardiomyopathy, 1× severe mitral regurgitation with pulmonary edema, 1× status after Senning operation for uncorrected transposition of the great arteries with global dysfunction of the systemic right ventricle; <sup>2</sup> – 1× pulseless ventricular tachycardia and ventricular fibrillation, 1× polymorphic ventricular tachycardia (both patients after cardiopulmonary resuscitation)

**Tab. 1b.** Leading cardiovascular diagnosis in patients of group 2 (mWHO < III)

	mWHO class	n
Congenital heart diseases	II-III <sup>1</sup>	4
	< III	3
	II	1
	I	6
Asymptomatic moderate aortic stenosis	II-III	3
Hypertrophic obstructive cardiomyopathy <sup>2</sup>	II-III	1
Severe aortic regurgitation	II-III	1
Loeys-Dietz syndrome without aortic dilatation	II-III	1
Third-degree atrioventricular block	< III	4
Status after heart transplantation <sup>2</sup>	< III	1
Left ventricular pseudoaneurysm <sup>3</sup>	< III	1
Incessant nonsustained ventricular tachycardia <sup>4</sup>	< III	1
Symptomatic ventricular preexcitation	II	3
Atrioventricular nodal reentry tachycardia <sup>6</sup>	II	1

<sup>1</sup> – 3× status after surgery for tetralogy of Fallot with severe residual pulmonary regurgitation, 1× hemodynamically severe partial anomalous pulmonary venous return; <sup>2</sup> – for heart failure due to hypertrophic cardiomyopathy; <sup>3</sup> – after mitral valvuloplasty for infective endocarditis; <sup>4</sup> – status after radiofrequency catheter ablation of the substrate; <sup>5</sup> – status after septal myectomy and mitral valvuloplasty; <sup>6</sup> – with extreme tachycardia

## Results

In group 1, we analyzed 19 pregnancies in 17 women, with 20 fetuses and 20 live-born neonates. In group 2, there were 35 pregnancies in 31 women, with 36 fetuses and 34 live-born neonates, while two pregnancies ended in miscarriages.

The most common heart diseases were congenital heart diseases (33.3% of the total cohort), heart rhythm disorders (22.9%), and valvular heart diseases (20.8%). This was followed by pulmonary arterial hypertension (6.3%), cardiomyopathies (4.2%), and aortic diseases (4.2%).

An overview of cardiac diagnoses in groups 1 and 2 are presented in Table 1a and 1 b, respectively. Six patients (12.5% of the total cohort) had an extremely high risk of maternal mortality or severe morbidity (mWHO IV). Eleven patients (22.9%) had a significantly increased risk of maternal mortality or severe morbidity (mWHO III). The remaining 31 patients (64.6%) had low to intermediate risk. In group 1, two patients were on full anticoagulation therapy (both for mechanical valve prostheses; 11.8% of the patients). In group 2 there was no patient on anticoagulation therapy.

The characteristics of both groups are shown in Table 2. The groups did not differ significantly in average age, the percentage of twin pregnancies, primipara, or in the number of abortions in previous pregnancies.

**Tab. 2** Characteristics of pregnancies

	Group 1 (n = 19)	Group 2 (n = 35)	p
Age (years)	31.9 ± 3.7	30.3 ± 4.7	NS
Twin pregnancies	1 (5.3%)	1 (2.9%)	NS
Primipara	11 (57.9%)	23 (65.7%)	NS
Prior abortion	7 (36.8%)	6 (17.1%)	NS

NS – not significant

The obstetric outcomes are presented in Table 3. In several aspects, they were significantly worse in group 1. High-risk women gave birth significantly earlier than low-risk women. They had a significantly longer hospitalization, a higher proportion of deliveries per Caesarean section (C.s.), and higher estimated blood loss during operative delivery. All patients in group 1 underwent operative delivery. Operative vaginal delivery using vacuum extraction was performed only in group 2 (9.4% of all deliveries). Emergent operative delivery was not indicated for any parturient. Intra-amniotic infection was not detected in any case.

The most significant differences between groups were related to neonatal outcomes (Table 4). Newborns of mWHO class III and IV mothers had significantly lower birth weight and length and worse Apgar scores (one minute and five minutes). In group 1, there was