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MALNUTRITION DURING PERI-PUBERTAL PROGRAMS TO CARDIAC HYPERTROPHY IN MALE ADULT RATS



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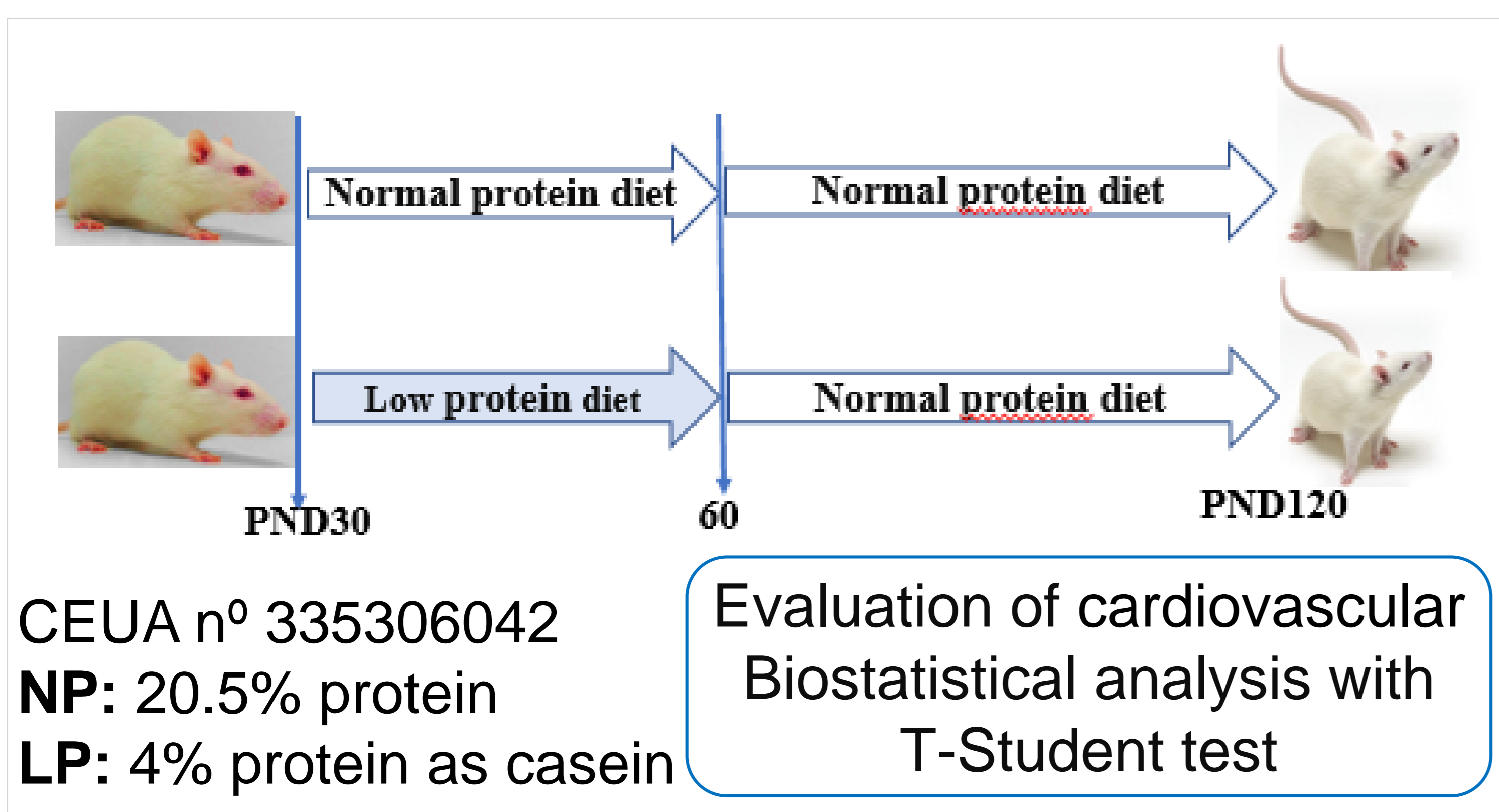
Introduction

Protein restriction (LP) in perinatal life induces hypertension related to cardiovascular system dysfunction in adulthood(1). However, the implication of cardiovascular system in the hypertension induced by peri-pubertal protein restriction is unknown.

Objective

This study aims to evaluate whether protein restriction in peri-pubertal phase induces hypertension related to a cardiac structural dysfunction.

Methodology



Results

Figure 1: Blood pressure at baseline

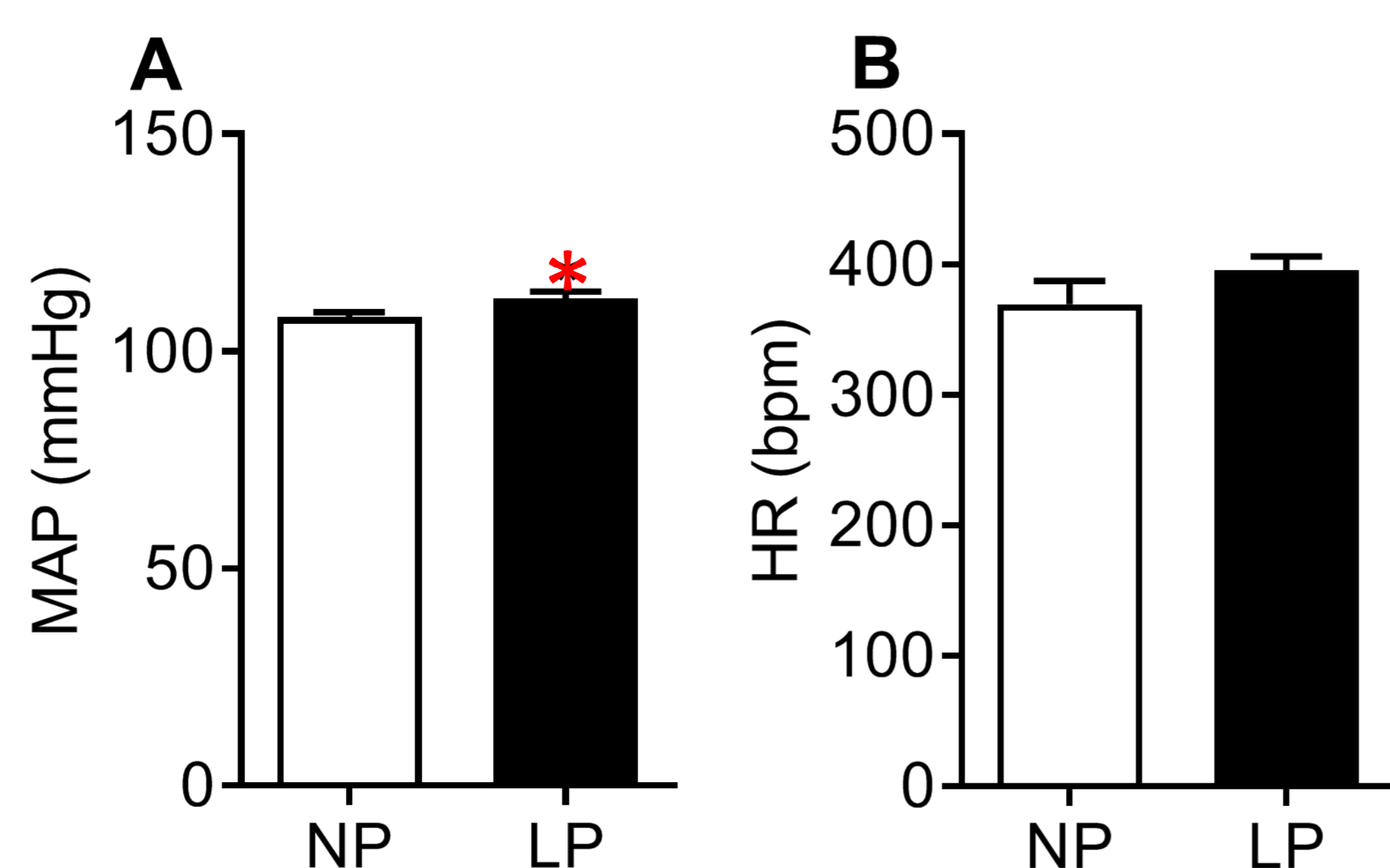


Table 1,2,3: Echocardiogram parameters

Diastole parameters	NP	LP
Inter. septum (mm)	0.98 ± 0.025	1.06 ± 0.024*
LV diameter (mm)	3.16 ± 0.086	3.44 ± 0.066*
LV posterior wall (mm)	1.06 ± 0.021	1.16 ± 0.027**

Systole Parameters

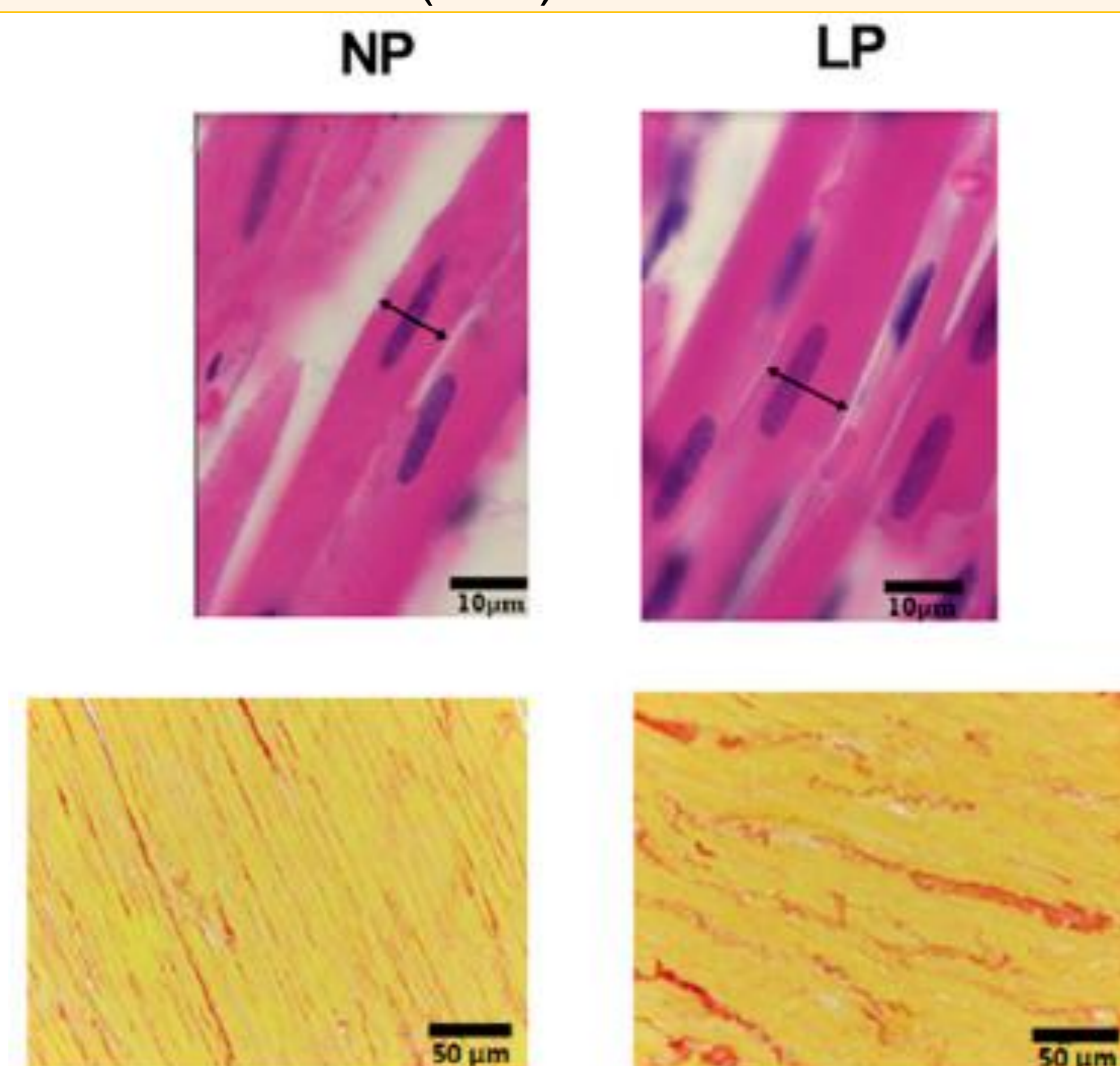
	NP	LP
Inter. septum (mm)	1.34 ± 0.052	1.52 ± 0.053*
LV diameter (mm)	1.76 ± 0.064	1.97 ± 0.060*
LV posterior wall (mm)	1.37 ± 0.045	1.49 ± 0.032*

Functional Parameters

	NP	LP
Fractional shortening %	45.51 ± 1.53	41.94 ± 0.81*
Ejection fraction %	79.70 ± 1.29	78.85 ± 0.92

Table 4: Histological analysis in the heart

Histological analyzes	NP	LP
Cardiomyocyte diameter (µm)	10.4 ± 0.26	11.5 ± 0.43*
Interstitial Fibrosis (%)	5.4 ± 0.43	7.2 ± 0.59*
Perivascular fibrosis (a.u.)	4.2 ± 0.15	4.1 ± 0.15



Conclusions

Protein restriction in peri-pubertal phase leads to hypertension and a greater cardiac morphological and functional impairment in adulthood.

Acknowledgment

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References

1. Assalin, H. B., Gontijo, J. A. R., & Boer, P. A. (2019). miRNAs, target genes expression and morphological analysis on the heart in gestational protein-restricted offspring. *PLoS One*, 14(4), e0210454.