

Pubertal Development in a Cohort of Romanian School-Aged Children

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INTRODUCTION

The average age of onset of puberty development has lowered in last decades due to multiple confounding factors. No recent populational studies are available in our country regarding pubertal development.

OBJECTIVE AND HYPOTHESE

The aim of our study was to identify the timing of pubertal characteristics in our region in children of school age. Our hypothesis was that the age of pubertal onset has diminished.

METHODS

Type of study: cross-sectional; target population: school-aged children 6-15 years of age; sample: composed of 1168 children randomly selected from 4 rural and 4 urban areas of Mures county. Variables: age, environment, sex, birth weight, breast and pubic hair Tanner stage, age of menarche. The pubertal evaluation was performed by 2 trained endocrinologists. The study was approved by the local ethics committee and a written consent was obtained for every child. Children refusing the evaluation were excluded from the final analysis. Statistical analysis used Microsoft Office Excel. The results are expressed as means and standard deviations.

RESULTS

Sex ratio boys : girls was 1.01; environment ratio urban : rural was 1.07. From the total sample, 107 children refused the evaluation and were excluded. The mean age of onset of pubertal development was 10.1 ± 1.5 years in girls and 10.4 ± 1.5 years in boys (Fig. 1). Children from rural areas reached onset of puberty sooner both in girls and boys (by 0.19 respectively 0.07 years) (Fig. 2). The average age of menarche was 11.87 ± 0.96 years with only 0.06 years difference in rural and urban areas (Fig. 3). The mean age of puberty stage 5 was 13.1 ± 1.21 years in girls and 13.33 ± 1.52 years in boys. Children born with low birth weight enter puberty at about the same age as others, but girls have a mean age at menarche significant higher (Fig. 4).

DISCUSSIONS

The secular trends in child growth have been demonstrated, and the timing of puberty has lowered [1], but, at least for our sample, this is not true in our country. The only significant difference was found in the age of the menarche of LBW girls, which were stated also elsewhere [2-4]. No differences were found between the genders or the environment.

CONCLUSIONS

This study shows that age of onset of normal pubertal development is not lower in our country, but the time frame of puberty has narrowed.

Figure 1 – Mean age at puberty onset

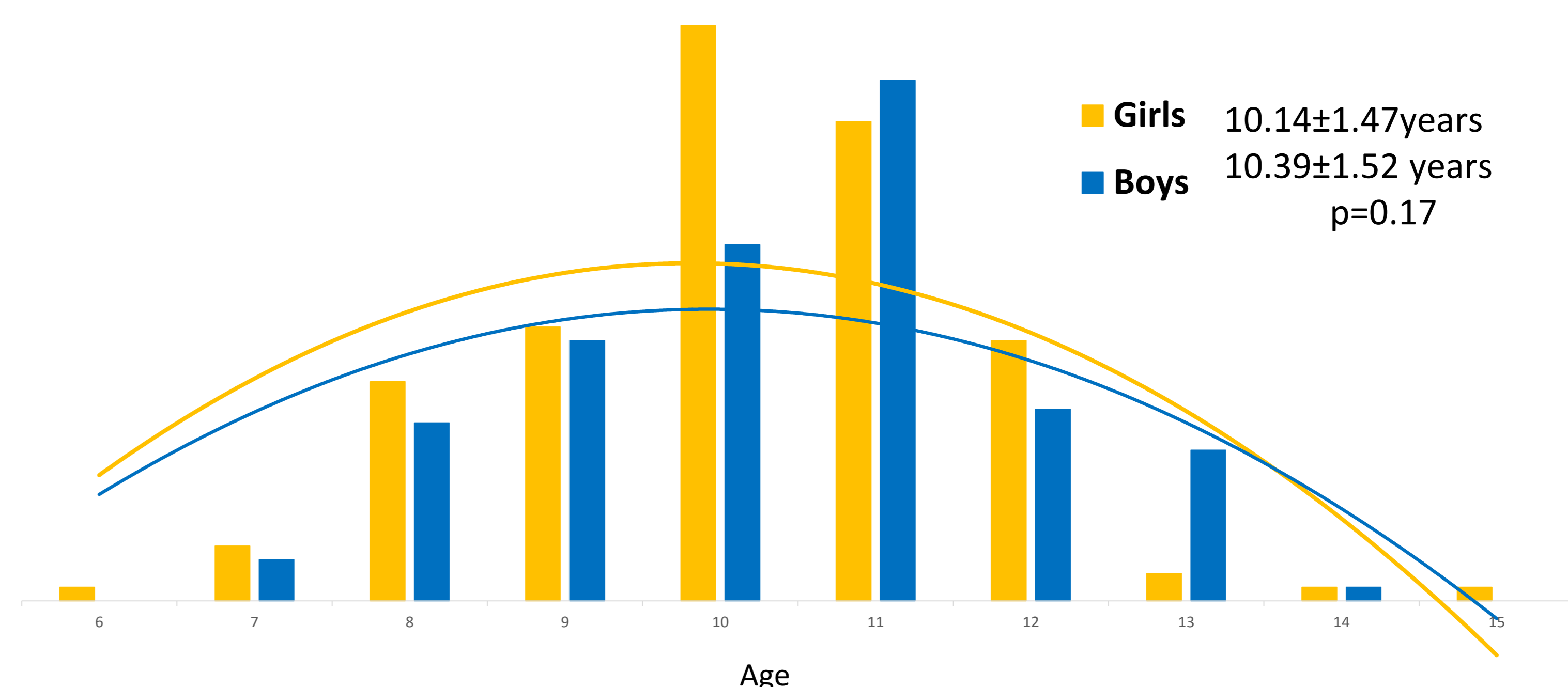


Figure 2 – Mean age at puberty onset by environment

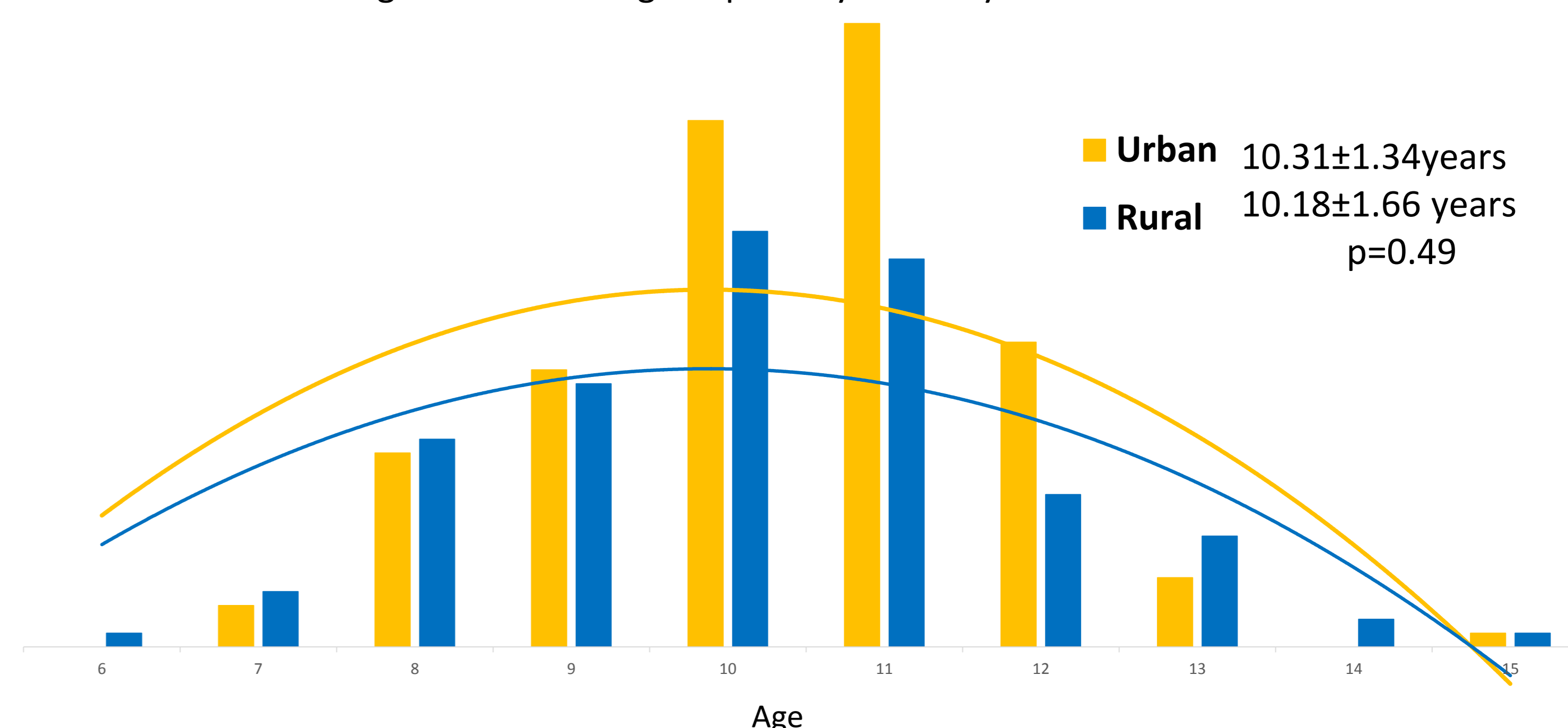


Figure 3 – Mean age at menarche by environment

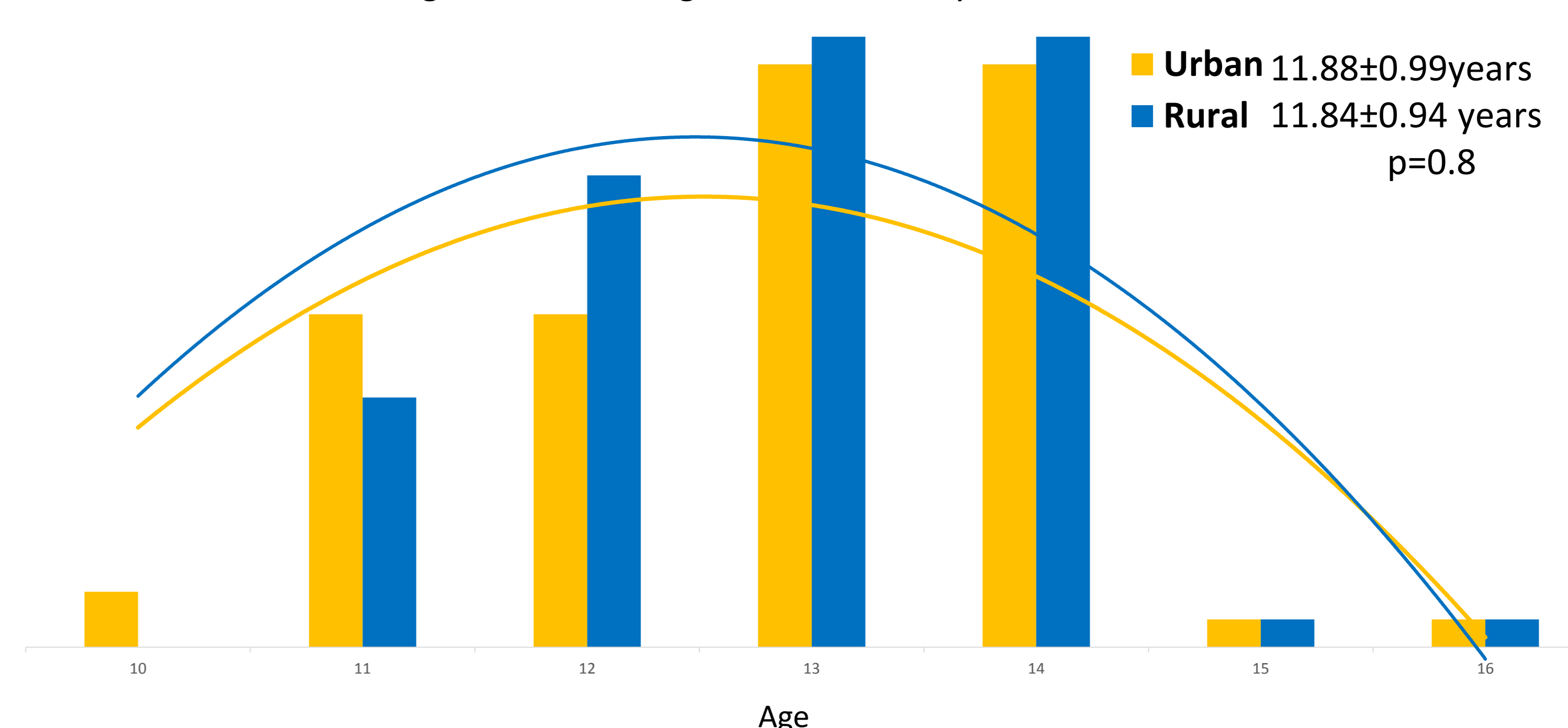
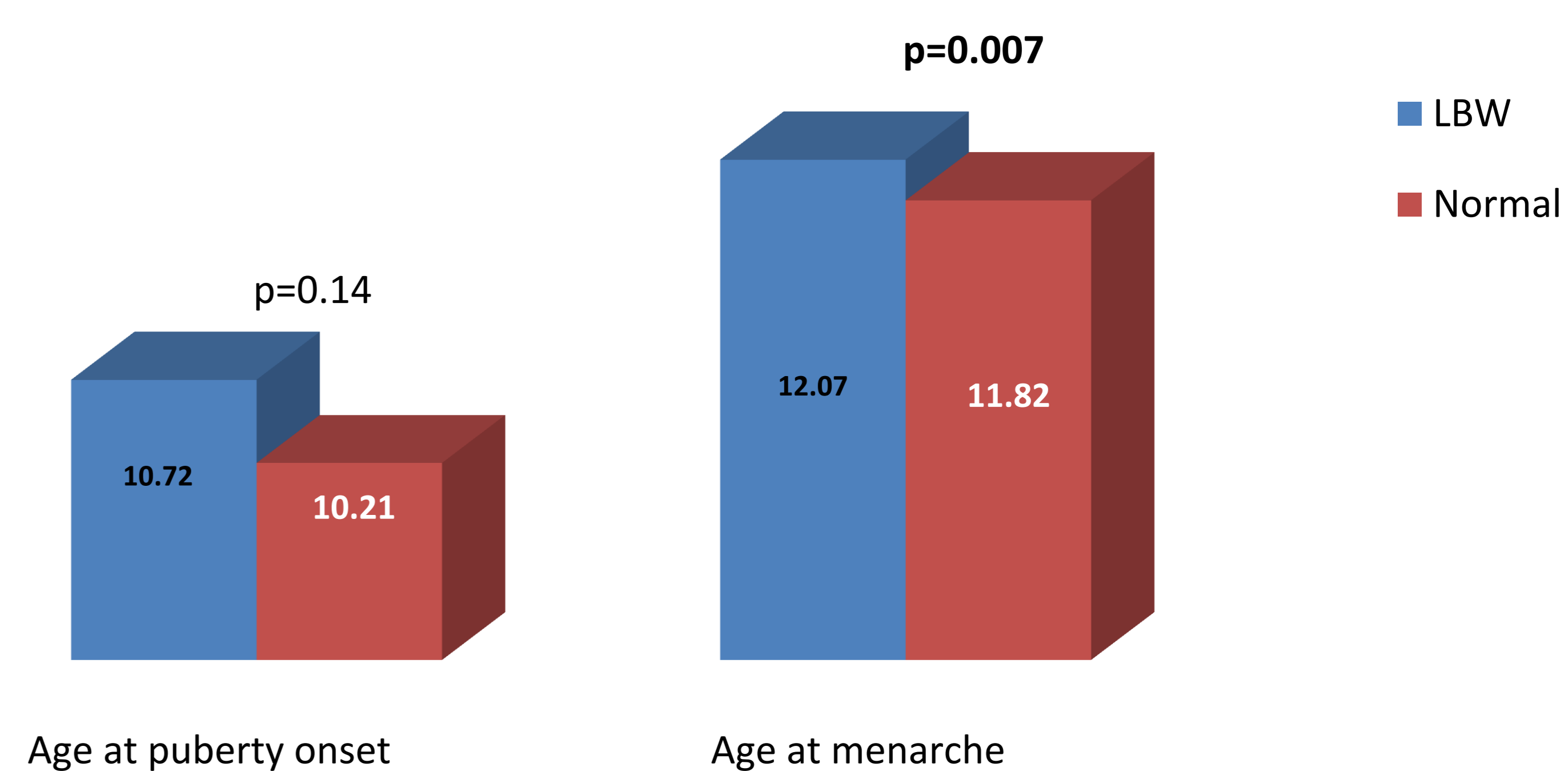


Figure 4 – Low birth weight vs. appropriate birth weight



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