EARLY DECLINE IN SERTOLI CELL FUNCTION DURING PUBERTY IN OVERWEIGHT AND OBESE BOYS: A CROSS-SECTIONAL STUDY

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Introduction:
• Alterations in semen characteristics and Sertoli and Leydig cell functions have been described in obese male adults.
• Same alterations in obese boys?

Objective = describe the gonadic function of overweight and obese (ow/ob) children and adolescents compared to that of lean boys before and during puberty.

Research design and methods:
• cross sectional study
• 351 ow/ob boys aged 5-19 years
• From 2010 to 2018
• physical and biological examination (gonadic function, OGTT on insulin and glucose)
• DEXA for body composition

Compared to 652 lean healthy boys of similar age or Tanner stages.

References:

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Conclusion: An early decline in Sertoli cell function preceding that in Leydig cell function was observed during puberty in the ow/ob boys.

Increase in median inhibin B levels was lower in ow/ob:
• from the age of 12 years
• from Tanner stage 1 and age > 10 years

Greater dispersion of AMH values observed in ow/ob from the age of 12 years: 22% of the AMH values of obese boys were below the 5th percentile of normal boys from the age of 12 years

Multiple regression analyses:
• estradiol levels and total bone mineral density (BMD) Z-score = negative predictors of inhibin B level
• fat mass percentage = negative predictor of testosterone level
• Fasting insulin = negative predictor of AMH level