

TABLE 1. Levels of Adrenal Androgens in Normal-Weight and Obese Children

	Normal Weight Mean (Range)	Overweight Mean (Range)	Obese Mean (Range)	<i>P</i> <sup>a</sup>
Girls				
Testosterone, ng/mL	0.11 (0.06–0.20)	0.14 (0.10–0.21)	0.16 (0.09–0.24)	.112
DHEAS, $\mu$ g/mL	0.71 (0.41–1.10)	0.85 (0.61–1.15)	0.88 (0.57–1.21) <sup>b</sup>	.081
$\Delta^4$ -A, ng/mL	0.4 (0.2–0.8) <sup>b</sup>	0.6 (0.4–1.1) <sup>b</sup>	0.6 (0.4–0.8) <sup>b</sup>	<.05 <sup>b</sup>
IGF-1, ng/mL	199 (140–318)	236 (180–283)	200 (190–266)	.681
Boys				
Testosterone, ng/mL	0.08 (0.04–0.15) <sup>b</sup>	0.17 (0.06–0.26) <sup>b</sup>	0.28 (0.09–0.39) <sup>b</sup>	<.05 <sup>b</sup>
DHEAS, $\mu$ g/mL	0.51 (0.21–0.92)	1.10 (0.82–1.24) <sup>b</sup>	1.12 (0.20–2.12)	.056
$\Delta^4$ -A, ng/mL	0.4 (0.2–0.7)	0.5 (0.3–0.6)	0.6 (0.4–1.0)	.524
IGF-1, ng/mL	200 (89–257) <sup>b</sup>	170 (116–207) <sup>b</sup>	288 (267–369) <sup>b</sup>	<.05 <sup>b</sup>

<sup>a</sup> Kruskal-Wallis test.

<sup>b</sup> Results were significant.

**CONCLUSIONS:** A higher frequency of obesity and advanced BA was observed in children with benign premature adrenarche, with a strong correlation between BA and degree of obesity. Furthermore, obese children were characterized by higher levels of adrenal androgens compared with normal-weight children.

## MANAGEMENT OF DIABETIC KETOACIDOSIS: SUCCESSFUL MANAGEMENT EXPERIENCE OF MORE THAN 32 YEARS

Submitted by Surendra Varma

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**INTRODUCTION:** Diabetic ketoacidosis (DKA) in children and adolescents has a mortality rate of 1% to 2%. The proper management of DKA requires intense monitoring and clear understanding of pathophysiology related to it. Potential complications include cerebral edema, hypokalemia, hypoglycemia, and relapse.

**OBJECTIVE:** Our goal was to describe our long-term experience in the management of diabetic ketoacidosis in children.

**METHODS:** This study comprised a 32-year experience of managing DKA in the pediatric age group. More than 900 episodes of DKA were encountered during this period. The age range of patients was from 9 months to 18 years. These episodes included patients presenting with new-onset type 1 diabetes as well as known patients with recurrent DKA. All patients were managed in a PICU by residents directly supervised by Dr Varma following an established protocol, including careful monitoring and paying particular attention to avoiding complications.

**RESULTS:** In >900 admissions during this period, the mortality rate was 0%, and the incidence of cerebral edema was <0.1%. Hypoglycemia and relapse occurred in <1% of the cases. The only occurrence of severe hypoglycemia (electrocardiographic changes and arrhythmia) was in a patient who was transferred from an outlying hospital after 36 hours of inappropriate treatment.

**CONCLUSIONS:** Our experience demonstrates that children with DKA can be managed successfully with minimal complications by adhering to the following principles:

1. early recognition and rapid transport to an ICU with experienced staff and physicians; and
2. adherence to well-established standards of treatment, including:
  - proper fluid and electrolyte management aimed at avoiding overhydration and extreme levels of electrolytes;
  - cautious correction of acidosis;
  - slow, steady reductions in plasma glucose and avoidance of hypoglycemia;
  - careful monitoring of clinical status (sensorium, state of hydration, vital signs, etc) and laboratory study results; and
  - frequent reassessment of the patient with adjustments and changes in treatment as dictated by the patient's needs.

## Epidemiology

### ASTHMA IN GREEK CHILDREN FROM BIRTH TO 18 YEARS: A LONGITUDINAL STUDY

Submitted by Flora Bacopoulou

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**INTRODUCTION:** The striking worldwide variation in the prevalence of asthma and its divergent changes over time necessitates regional longitudinal studies.

**OBJECTIVE:** We aimed to examine the asthma situation in Greece.

**METHODS:** Data from a longitudinal study of a representative nationwide sample derived from the National Perinatal Survey (11 049 consecutive births in April 1983) were analyzed in an attempt to describe the prevalence and natural course of asthma from birth throughout childhood to adolescence. We followed up with 2133 children (at the ages of 7 and 18 years) by using written questionnaires. The diagnostic labeling of asthma was confirmed by a physician on the basis of a history of wheeze attacks, nocturnal cough, exertional symptoms, and response to treatment.

**RESULTS:** Prevalence rates of current asthma were 7.7% and 4.7% and of lifetime asthma were 19.6% and 26.3% at 7 and 18 years, respectively. More than half (58.2%) of the children with early-onset asthma (onset before the age of 7 years) were free of symptoms at the

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