

CYTOKINES AND THE IMPAIRMENT OF PUBERTY



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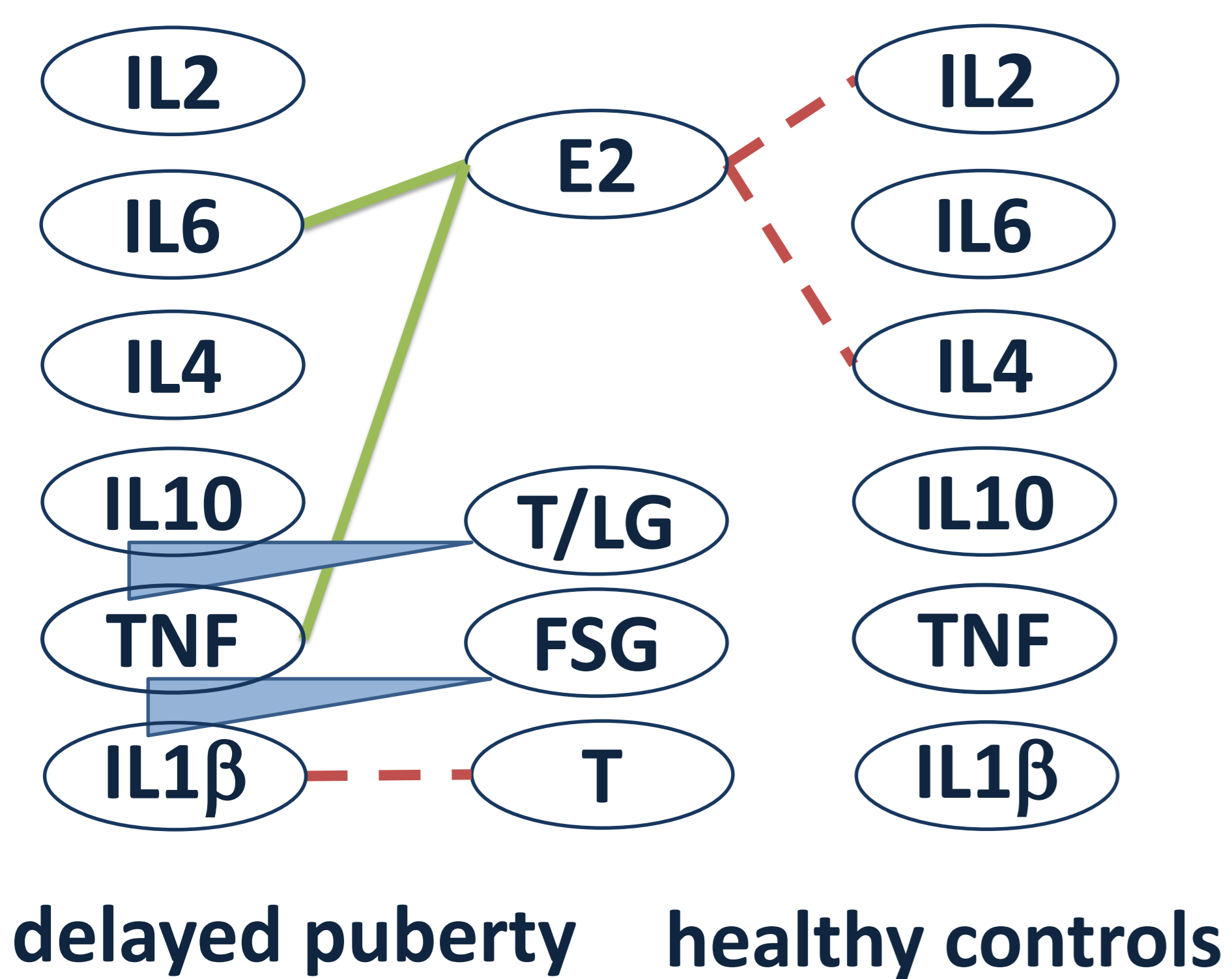
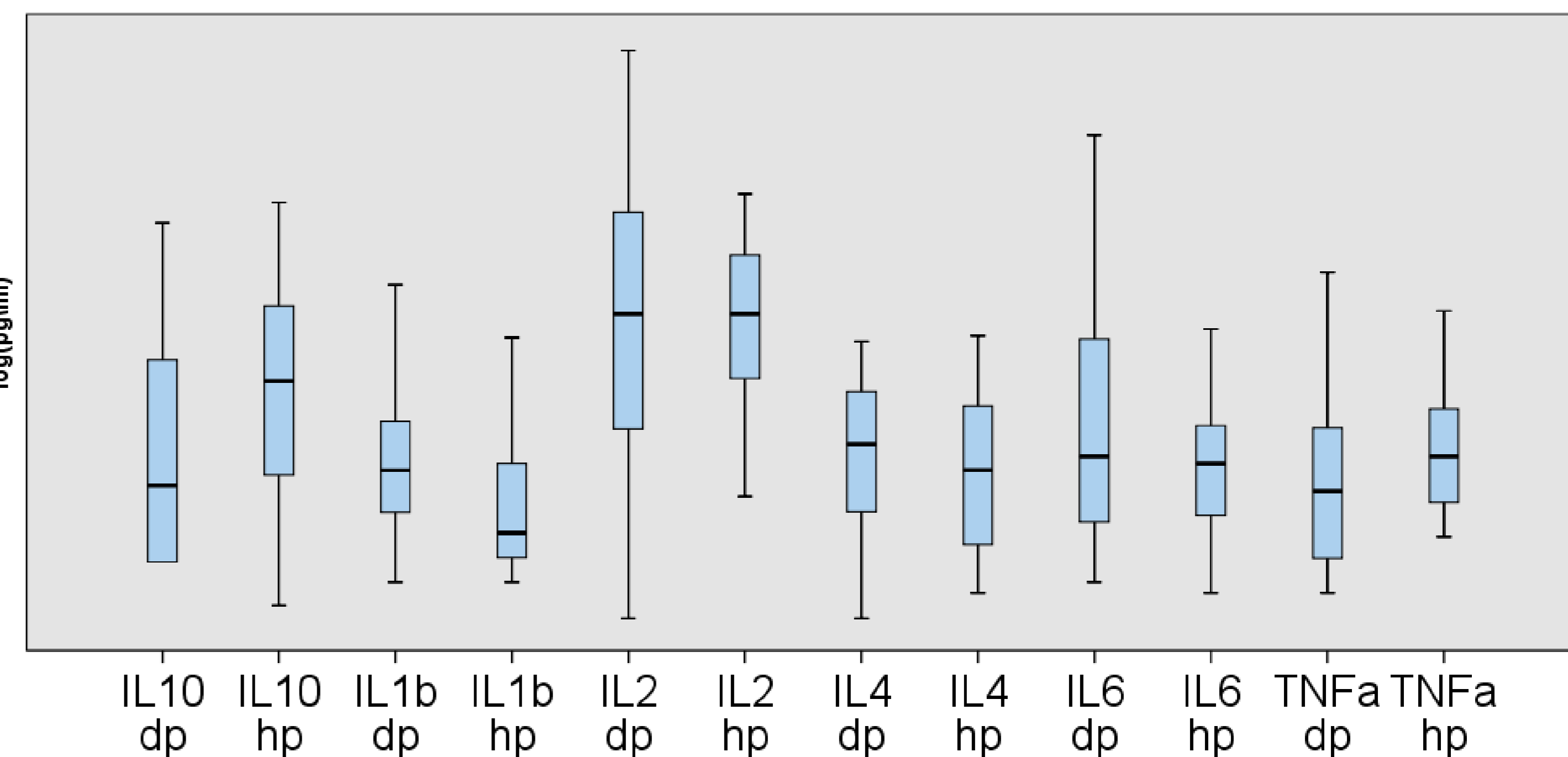
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Background: The changes of the immune reactivity, the production of hormones and the neuroendocrinal regulation of immune homeostasis are the entities closely connected with the puberty. There is evidence for the role of cytokines in securing of intersystemic interaction as well as for the influence of reproductive hormones on the cytokine production. However, the question as to the role of cytokine in the formation of delayed puberty continues to be relevant.

Objective and hypotheses: to study the characteristics of cytokine-hormonal interactions at teenaged boys with delayed puberty.

Materials and methods: Serum cytokine profile tumor necrosis factor- α (TNF- α), interleukin (IL) 1 β , 2, 4, 6, 10 and testosterone (T), estradiol (E2), luteinizing hormone (LH), follicle stimulating hormone (FSH) levels of 82 delayed puberty adolescents (dp) were compared with 78 healthy controls (hp).

Results: The serum IL1 β level was increased and TNF- α level was decreased in delayed puberty than healthy controls ($P > 0.04$). The IL10 level was increased but no significant ($P > 0.06$). There were showed no significant difference in IL2, IL4, IL6 delayed puberty and healthy controls.



Correlation analysis showed that T had a negative relationship with IL1 β in delayed puberty and were not significant correlations in healthy controls. Level E2 had a positive relationship with TNF- α and IL6 in delayed puberty in contrast to a strong negative correlation E2 with IL2 and IL4 in healthy controls. Stepwise multiple linear regression analysis revealed combined influence of IL1B and TNF- α on the production of FSH ($p < 0.01$) as well as TNF- α and IL10 on the correlation T/LH ($p < 0.05$).

Conclusion: the existence of the relation between the exponents of hormonal panel and cytokine production may witness about the belonging of last to functioning of hypophyseal gonadal system at patients with delayed puberty. The impairment of neuroimmunohormonal regulation is one of the mechanisms of delayed puberty.

