

**13** CONADOTROPIN SECRETION AND TESTICULAR HISTOLOGY IN HUMAN CRYPTORCHIDISM. DOMENE H., GOTTLIEB Silvia, CHEMES H y BERGADA C. CEDIE, Hospital de Niños. Buenos Aires.

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The majority of the patients surgically treated for bilateral cryptorchidism before puberty, are sterile. It seems that this could be due more to a primary testicular damage than to the age when surgical correction was performed. Ten boys with monorchid (M), 10 unilateral (UCQ) and 31 bilateral cryptorchid (BCQ) testes were studied to evaluate testicular function before adulthood in an intent to predict future fertility. LH and FSH levels were measured by RIA before and after Gn-RH (25 ug) administration. No difference between M, UCQ and BCQ was found at prepubertal age. Patients with BCQ at pubertal age presented two different responses: Group I (n=4) LH ( $\bar{x} \pm ES$ ) basal (b)  $28 \pm 5$  maximal response (mr)  $142 \pm 30$ ; FSH (b)  $86 \pm 22$ , (mr)  $162 \pm 49$ . Group II (n=6) LH (b)  $71 \pm 19$ , (mr)  $385 \pm 49$ ; FSH (b)  $333 \pm 40$ , (mr)  $917 \pm 184$ , being significantly different LH response (p 0.01) and b and mr. FSH (p 0.0025 and p 0.01 respectively). In 4 patients from these two groups testicular biopsies were obtained during orchidopexy and demonstrated complete spermatogenesis in patients of Group I and severe testicular damage in Group II. In conclusion, Gn-RH stimulation in puberty gives interesting data regarding future fertility prognosis in bilateral cryptorchid patients treated in prepubertal age.

**14** QUANTITATION OF GERMINAL EPITHELIUM IN PREPUBERTAL HUMAN CRYPTORCHIDISM. GOTTLIEB Silvia, CHEMES H., VILAR O., BERGADA C. CEDIE, Hospital de Niños. Buenos Aires.

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There is no universal agreement about the time of treatment of cryptorchidism in order to prevent sterility after puberty. Testicular biopsies were embedded in Epon-Araldita and section of  $1 \mu$  were examined. Sertoli and germ cells were identified. 17 testicular biopsies from cryptorchid testes (CQ) and 5 contralateral scrotal testes (SC) in patients from 1 to 10 years were studied. Sertoli (S) and germ cell (G) quantitation was carried out. The values obtained were ( $\bar{x} \pm SEM$ ) S:  $1535 \pm 82$  (CQ) and  $1835 \pm 185$  (SC) and G:  $104 \pm 15$  (CQ) and  $213 \pm 79$  (SC). Evaluation of the relationship between number of germ cells per 1000 Sertoli cells reveals 2 different groups: Group A (n=12):  $49 \pm 5$  and Group B (n=5):  $128 \pm 19$ . In conclusion: 1) the number of Sertoli cells is practically constant, independently of the testicular position and treatment, 2) the lack of development of the germinal epithelium of the cryptorchid testes seems to be unrelated neither with the age nor with the treatment, suggesting a primary testicular defect. This could only be established with a biopsy obtained by an experienced surgeon and adequate possibilities for histological evaluation.

**15** COMPENSATORY TESTICULAR GROWTH AFTER UNILATERAL ORCHIECTOMY IN THE RAT. JASPER H., DOMENE H., BERGADA C.

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Since evolution and final outcome of infantile compensatory testicular growth haven't been completely evaluated we studied them in an experimental model. Twenty seven day-old rats underwent unilateral orchiectomy (OR) or a sham operation (SR) and were then killed at ages 34, 42 50 and 60 days. In the testes we measured weight, protein and DNA content, the protein/DNA ratio and  $^3H$  thymidine incorporation into DNA. At ages 34 and 50 days there were no significant differences between OR and SR. At age 42 days mean weight, protein and DNA were significantly greater in OR (573 vs 476 mg; 23.5 vs 19.9 mg; 1.490 vs 1.323 mg respectively;  $p < 0.05$ ).  $^3H$  thymidine incorporation into DNA measured at 34, 42 and 50 days was not significantly different between OR and SR. In the 27 day-old rat unilateral orchiectomy produces compensatory testicular growth, not evident at age 34 days but already present at 42 days. This phenomenon is hyperplastic (DNA increased significantly) and lacks hypertrophy (the protein/DNA ratio didn't change). Although at 42 days DNA had increased  $^3H$  thymidine incorporation was not different, indicating compensatory growth had already finished. This is supported by the finding in 50 and 60 day-old rats of no significant differences in testicular weight, protein and DNA.

**16** Urinary prostaglandins and kallikrein in healthy children from birth to adolescence. GODARD C.M.; DALE, H.D.; FAVRE, H.; LUCOT, G. and VALLOTON M.B.-Dept. of Pediatrics, District Hospital, Monthey and Division of Endocrinology University Hospital, Geneva, Switzerland.

The aim of this study was to establish normal values for urinary excretion of prostaglandins (PGE<sub>2</sub> and F<sub>2α</sub>) and of kallikrein (KALL) at different ages of development, and to correlate them with several parameters of renal function. In 55 healthy infants and children of both sexes, aged 2 days to 14 years, daily urinary PGE<sub>2</sub> and PGF<sub>2α</sub> were determined by specific radioimmunoassays; KALL was measured by an enzymatic method. Results (mean  $\pm$  SEM):

| Age               | 1-3days   | 5-8days   | 2-3weeks  | 4-12months | 4-9years   | 10-14years |
|-------------------|-----------|-----------|-----------|------------|------------|------------|
|                   | n         | 10        | 4         | 7          | 14         | 10         |
| PGE <sub>2</sub>  | 36.3      | 20.3      | 28.9      | 37.5       | 135.4      | 238.2      |
| ng/24hr           | +10.2     | +6.8      | +11.9     | +6.4       | +15.6      | +44.3      |
| PGF <sub>2α</sub> | 134.4     | 104.4     | 161.0     | 231.7      | 625.8      | 710.6      |
| ng/24hr           | +28.8     | +25.3     | +57.6     | +77.6      | +57.1      | +103.1     |
| KALL              | 8.2       | 10.7      | 12.0      | 44.8       | 326.3      | 567.2      |
| mU/24hr           | $\pm 1.0$ | $\pm 2.0$ | $\pm 6.1$ | $\pm 6.1$  | $\pm 70.1$ | $\pm 97.1$ |

In contrast to the activity of the renin-angiotensin-aldosterone system, which is known to decrease from birth on, urinary PGE<sub>2</sub>, PGF<sub>2α</sub> and KALL significantly increased with age. These changes were not correlated to blood pressure, UV, UNa<sup>+</sup>, Uosm or GFR, and were obliterated when results were corrected for surface area.

**17** Insulin secretion induced by immune responses. BASA-BE J.C., BRUNO L.F. DE, ALVAREZ E., GARCIA J., ARATA M., PIVETTA O.- Fundacion FLIP. Hospital General de Niños y Centro Nacional de Genética Médica, Buenos Aires Argentina.

The effect of SRBC and of allogeneic lymphocytes (AL) injection, on insulin (I) secretion in incubated pancreas slices of BALB/c mice; studied. SRBC injected in BALB/c, induces an increase in the insulin secretion stimulated by 11mM glucose (G). Pancreas obtained from BALB/c (H2d) injected with lymphocytes of C57B1/6J (H2b), produces a higher insulin secretion than that injected with syngenic lymphocytes. There is no difference in the I secreted by BALB/c pancreas, when the mice were injected with BALB/c (H2d) or C57B1/Ks (H2d) lymphocytes. When 1/10 from BALB/c mice injected with C57B1/6J lymphocytes, is used as incubation medium, I secretion, is higher than when buffer or serum of BALB/c injected with syngenic lymphocytes is utilized. The results suggest that: a) SRBC and AL, increase the I secretion induced by G., b) This effect seems to be related to the major histocompatibility complex. c) even a direct action of AL. can not be ruled out, AL. injection could produce the release into serum of some substance(s) that stimulate insulin secretion.

**18** Effect of cystic fibrosis (CF) serum on the kinetics of phagocytosis of pulmonary alveolar macrophages (PAM).

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Although several organs are clearly affected in CF, lung disease constitutes the principal factor which determines patient prognosis. In the present work, a kinetic assay using CF-PAMs was designed in order to investigate the effect of CF serum on the phagocytic function of these cells. The phagocytic process was treated as an enzymatic system, with the principal interest being the determination of the Michaelis constant and the maximum velocity, by means of the Eisenthal and Cornish-Bowden direct plot. Bronchopulmonary lavages were performed on 8 CF children, 8 children with non-CF infectious lung disease, and 5 normal children who were diagnosed as having a foreign body in the air passages, without infection; all the controls were age and sex matched to CF patients.

The CF serum had no effect on the kinetic of phagocytosis of *Candida albicans* by CF- and control PAMs. An interesting finding was the decrease in the affinity of CF-PAMs for the *Candida* yeasts, which was suggested by an increased value of the corresponding Michaelis constant; simultaneously, the CF-PAMs appeared to be less effective than the ones coming from the infected non-CF, or the non-infected human respiratory tracts. In conclusion, the phagocytic capacity of human PAMs might not be affected by CF serum; a cell failure due to the interaction between CF-PAMs and an altered lung milieu is proposed.