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ABSTRACTS OF SHORT PAPERS

Growth Hormone and Pituitary Tumors

LH — RH

15. *W. Voelter, K. Zech* and *D. Gupta:* Synthesis of a peptide sequence Pyr-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-NH_2 with biological activity of LH/FSH-RH.
16. *H. Kuhl, C. Rosniatowski* and *H.-D. Taubert:* The role of hypothalamic L-cystine arylamidase activity in the feed-back mechanisms of gonadotrophin release.
17. *H.-D. Taubert, J. S. E. Dericks-Tan* and *H. Kuhl:* Stimulation of hypothalamic L-cystine arylamidase activity by prostaglandins E_2 and $F_{2\alpha}$ in the rat.
18. *G. Leyendecker, L. Wildt* and *W. Nocke:* Radioimmunoassay of LH-releasing hormone.
19. *E. Keller, H. G. Dahlen, G. Schubring, W. Klemt, R. Richter, E. Friedrich, E. W. Joel, H. I. Wyss, A. E. Schindler, H. J. Staemmler* and *H. P. G. Schneider:* Human pituitary gonadotropin index (HPGI): statistical analysis of 413 LRH tests.
20. *J. Happ, J. Beyer, F. Szamak, M. Neubauer, K. Demisch* and *K. Schöffling:* LH, FSH, testosterone and estrogens in serum of healthy men after prolonged infusion of synthetic LH-RH.
21. *A. Römmler* and *J. Hammerstein:* Time-dependent alterations in pituitary responsiveness caused by LH-RH stimulations in man.
22. *J. Girard, J. J. Staub, J. B. Baumann, M. Stahl* and *P. W. Nars:* Assessment of hypothalamo-anterior pituitary secreting capacity with one single test.
23. *D. Lüdecke, P.-C. Czygan, R. Hehrmann* and *D. Schrader:* Combined function tests with LRF and TRF in correlation to pituitary processes confirmed by operation findings.
24. *H. K. Kley, W. Wiegelmann, H. G. Solbach* and *H. L. Krüskemper:* A combined test for evaluating the somatotrophic, gonadotrophic and adrenocorticotrophic function of the anterior pituitary gland.
25. *D. Schönberg, E. W. Joel, E. Jetter* and *J. Bierich:* Graded dose response of plasma HLH and HFSH to synthetic gonadotrophin releasing factor in boys and girls before and after puberty onset.
26. *R. Illig, M. Tolksdorf, G. Mürset* and *A. Prader:* Evaluation of the hypothalamic-pituitary-gonadal axis by LH-RH in children and adolescents with Klinefelter's and Turner's syndrome.
27. *S. Heller* and *H. Weber:* Influence on LH release by prostaglandin $F_{2\alpha}$ in the rat.
28. *J. Sandow* and *W. Heptner:* Positive feedback effect of small doses of LH-RH after chronic treatment.
29. *F. Elsaesser, F. Ellendorff, N. Parvizi* and *A. König:* Response of the pituitary and testes to LH-RH in the neonatal miniature pig.

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30. *D. Beckmann* and *H. Breuer:* Metabolism of estrogens in liver and kidney of minipigs of different age and sex.
31. *J. H. H. Thijssen, J. Lourens* and *G. H. Donker:* Biogenesis of production of oestrogens in males with cirrhosis of the liver.
32. *P. Ball* and *E. Knuppen:* Metabolism of ethynyloestradiol and mestranol in man and interaction between 2-hydroxy-ethynyloestradiol and epinephrine.

33. *H. M. Bolt:* Kinetics of mestranol in humans in relation to its estrogenic activity.
34. *W. Wortmann, J. Schenker* and *J. C. Touchstone:* Aromatization of ^{3}H-androstenedione in the rhesus monkey liver in vivo.
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36. *W. D. Lehmann:* The influence of prostaglandins and beta-mimetic substances on the aromatization rate in human placentas.
37. *L. Raith, A. Wirtz* and *H. J. Karl:* 5α-reduction of testosterone in mammary tumors.
38. *E. R. Lax* and *H. Schriefers:* Δ^4-3β-hydroxysteroid dehydrogenase activity in rat liver: intracellular distribution and sex dependency.
39. *H.-G. Hoff, R. Ghraf, E. R. Lax* and *H. Schriefers:* Regulation of the activities of the enzymes involved in the metabolism of steroid hormones in rat liver: the effect of 19-nortestosterone and the influence of cyproterone acetate on the action of testosterone and 5α-dihydrotestosterone.
40. *R. Ghraf, U. Vetter* and *H. Schriefers:* Organ specific sex differences in 17β-hydroxysteroid dehydrogenase activities in the rat.
41. *M. Krieg, R. Szalay* and *K. D. Voigt:* Binding and metabolism of testosterone and 5α-dihydrotestosterone in bulbocavernosus/levator ani muscle of male rats: in vivo and in vitro studies.
42. *H.-J. Horst, M. Dennis, J. Kaufmann* and *K. D. Voigt:* In vivo uptake and metabolism of ^{3}H-5α-androstane-3α, 17β-diol (3α-diol) and of ^{3}H-5α-androstane-3β, 17β-diol (3β-diol) by human benign prostatic hypertrophy.

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45. *A. E. Schindler, E. Keller, E. Friedrich, E. R. Jaeger-Whitegiver, E. W. Joel, H. Pösl* and *E. Stolz:* Endocrine studies in patients with testicular feminization.
46. *H. Stolecke, R. A. Pfeiffer, H. A. Hienz* and *P. Strohmenger:* "Sex reversal" in a case of mixed gonadal dysgenesis with dicentric Y-chromosome (45, X/46, X, dic (Yq).
47. *H. Cramer, R. Buchholz, E. Daume, H. Kalbfleisch* and *G. Sturm:* Mixed gonadal dysgenesis: male hermaphroditism with 46, XY/45, XO/46, X dic Y mosaicism.
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50. *U. Hirche:* Genitography: diagnostic procedure in intersex problems.
51. *A. Attanasio, K. Jendricke, J. R. Bierich, D. Gupta, G. Bulle, A. Flach, I. Reisert* and *E. Tonutti:* Cryptorchidism: clinical, hormonal and histological studies.

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53. *G. Benker, H. Kaulhausen, W. Oehm* and *H. Breuer:* Renin activity and con centration of aldosterone in plasma during the menstrual cycle.
54. *H. Kaulhausen, W. Mühlbauer, K. J. Beck* and *H. Breuer:* The effect of 17α ethynyloestradiol-17β on plasma renin activity in ovariectomized women.
55. *W. Oelkers, M. Schöneshöfer, A. Blümel, H. Kutschke, H. Kreiser* and *K. Sterzel:* Effects of progesterone and of four synthetic gestagens on the renin-angiotensin-aldosterone system in man.
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59. *U. Schwedes, H. Wehner, U. Leuschner, K. Schöffling* and *K. H. Usadel:* Development and function of isologous transplants of cell suspensions of fetal adrenal glands in the rat.
60. *E. Mäusle, H. Scherrer* and *B. Kubatsch:* Ultramorphometric studies regarding the effect of sex hormones on the adrenal cortex of the rat.
61. *R. Mies, D. Heesen* and *W. Winkelmann:* Disorders of Leydig cell function in primary adrenal insufficiency.
62. *E. Nieschlag* and *H. K. Kley:* Androgens in response to HCG in men with normal, suppressed and impaired adrenal function.
63. *W. v. Petrykowski* and *P. Burmeister:* Familial glucocorticoid insufficiency.
64. *J. Braun, O. A. Müller* and *P. C. Scriba:* Automated competitive protein binding analysis and radioimmunoassay of serum cortisol without prior organic solvent extraction.
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66. *A. T. A. Fazekas, J. Homoki* and *W. M. Teller:* Studies of the effect of ACTH on the cortisol content of different peripheral tissues and the adrenals in guinea pigs.
67. *B. P. Lisboa, M. Strassner, L. Nocke-Finck, H. Breuer* and *J. M. Bayer:* Studies on the metabolism of steroid hormones in a virilising tumour of the adrenal cortex.
68. *D. Engelhardt, L. Raith* and *H. J. Karl:* Female pseudohermaphroditism and hypertension due to 11β-hydroxylase deficiency in two siblings.
69. *F. Elsaesser, P. Stubbe* and *A. König:* Plasma testosterone, androstenedione and progesterone levels in newborn infants, in children and as an index of congenital adrenal hyperplasia.
70. *K. Holzmann, G. Wittenbecher* and *H. Mickan:* Prenatal diagnosis of adrenogenital syndrome.
71. *P. Edelmann* and *D. Gupta:* Hormonal investigations in adolescent idiopathic scoliosis.

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74. *R. D. Hesch, A. v. z. Mühlen* and *J. Köbberling:* T_3 levels and the TRH test in the early phase of treatment of thyrotoxicosis with antithyroid drugs.
75. *M. Hüfner* and *H. Munzinger:* Functional parameters of the pituitary-thyroid system in thyroidectomized patients under different conditions of substitution.
76. *R. Hehrmann, C. Schneider* and *I. H. Tewfik:* The efficiency of triiodothyronine therapy in athyroid patients.
77. *J. Herrmann, H. J. Rusche, W. Wildmeister, H. A. Horster* and *H. L. Krüskemper:* Triiodotyronine and thyroxine serum levels after administration of T_3/T_4 mixtures.
78. *K. W. Wenzel* and *H. Meinhold:* Serum T_4 levels measured by radioimmunoassay in a single 3 mg L-thyroxine test in comparison to the classical L-triiodothyronine test for thyroid suppressibility: evidence of lower toxicity during thyroxine suppression.
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96. *U. Krause, J. Beyer, K. H. Usadel* and *F. Stelzner:* Different insulin-producing tumors in a patient with polyadenomatosis of the islet cells.
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101. *L. Tharandt, R. I. Diekers, N. Breuer* and *W. Staib:* Effects of testosterone on glugacon and lactate-induced gluconeogenesis studied with the model of isolated perfused (without hemoglobin) mice livers.
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145. *J. Poortman, J. H. Prenen, J. H. H. Thijssen* and *F. Schwarz:* Interaction of Δ^6-androstene-3β, 17β-diol with oestrogen and androgen receptors in human uterine tissue and mammary tumour tissue.

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149. *P. Benes* and *G. W. Oertel:* Effects of DHEA and its sulfoconjugates upon c-AMP in human erythrocytes.
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159. *J. R. Strecker* and *Ch. Lauritzen:* Load-test for feto-placental function with DHA-S and determination of plasma estrogens by radioimmunoassay.
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ACTH

161. *R. Lang, I. Hilwig, H. L. Fehm, K. H. Voigt* and *E. F. Pfeiffer:* Monolayer culture of rat anterior pituitary cells as a model for studies of ACTH.
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163. *A. Espinoza, I. Andresen* and *M. Kroll:* Biological ACTH determination in human plasma in the pg-range.
164. *O. A. Müller, X. Baur, I. Marschner, P. Schwandt, P. C. Scriba* and *P. Weisweiler:* ACTH bioassay with isolated rat adrenal cells: ACTH activity of the porcine lipotropic peptide B.
165. *K. H. Voigt, H. L. Fehm, R. Lang* and *E. F. Pfeiffer:* Degradation of ACTH by isolated adrenal cells: influence of plasma.

ABSTRACTS OF MAIN PAPERS

Acta endocr. (Kbh.)
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II. Medizinische Klinik[1]
und I. Frauenklinik[2] der Universität München

PROLACTIN SECRETION IN PATIENTS WITH PITUITARY TUMORS*

K. v. Werder[1], *C. R. Pickardt*[1], *B. Glöckner*[1],
M. Gottsmann[1], *H. K. Rjosk*[2] and *P. C. Scriba*[1]

Problem: To elucidate the dynamics of prolactin (hPR) secretion in patients with pituitary tumors we set up a double antibody hPR-radioimmunoassay using the V. L. S.-reagents (National Pituitary Agency, NIAMD, USA).

Methods: 1 μg of Lewis-hPR was labelled with the chloramine-T-method and purified by one column chromatography on Sephadex G-100. Pooled pregnancy serum calibrated with the research standard A-71/222 (MRC, Division of Biolog. Stand., Holly Hill, London) served as standard: 1 ml of this standard serum contained 4000 μU of hPR-71/222, which was equivalent to 200 ng hPR-V.L.S. All data were expressed in μU hPR-72/222. There was only 0.1% crossreactivity with hGH and none with hPL, LH, TSH. The sensitivity of the assay ($B_0 \pm 3$ SD) was 12 μU/ml, the between assay coefficient of variation was 9.1%.

Results: The basal hPR-levels in normal males ranged from 170 to 500 μU/ml ($N = 21$), in females up to 650 μU/ml ($N = 20$). 55% of patients with *active acromegaly* ($N = 22$) had elevated basal hPR-levels ranging from 720 to 5400 μU/ml, whereas only 3 of 15 patients with inactive acromegaly had still elevated hPR-levels. No correlation existed between tumor size, hGH-secretion, and the hPR-level. The response to TRH was blunted in most patients tested. — The basal hPR-levels of 8 patients with amenorrhea, galactorrhea and pituitary tumor (*Forbes-Albright syndrome*) ranged from 2300 to 85000 μU/ml, the patients with the larger tumors having the higher hPR-levels. TRH injection caused only little further increase of the hPR-level. The hPR-levels could be effectively lowered by the removal of the tumor or by administration of CB 154, with concomitant disappearance of galactorrhea and amenorrhea. Three patients with galactorrhea without pituitary tumors had normal hPR-levels with a normal rise after TRH. — A dissociation of the TSH and hPR-response to TRH was seen in several of the patients with *disorders of thyroid function.* hPR-levels below the normal range with nonresponsiveness to TRH were only found in patients with complete anterior pituitary failure.

Conclusions: These results demonstrate that hyperprolactinemia is not only found in patients with hPR-producing tumors, though in these patients the hPR-levels may be extremely elevated, correlating with the tumor's size. Whether hyperprolactinemia in acromegaly is due to hypothalamic dysfunction, i. e. lack of PIF, or is rather a result of autonomous hypersecretion of hPR is still unclear. The blunted response to TRH in most cases, however, and the fact that small tumors can be accompanied by elevated hPR-levels, would favour an autonomous hPR-hypersecretion.

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