

ADVANCE ABSTRACTS

5th Acta Endocrinologica Congress

Acta Endocrinologica
Supplementum 100 (1965)

Fifth Acta Endocrinologica Congress
Hamburg, 3rd-7th August 1965

**ADVANCE ABSTRACTS
OF LECTURES
AND SHORT PAPERS**

Printed in Germany
Printed by Lütcke & Wulff, Hamburg

CONTENTS

The numbers refer to the Abstract numbers indicated at the top of each abstract.

Author Index: see p. 209

I. ABSTRACTS OF LECTURES

- I. L. Levi: Endocrine responses to emotional stimuli.
- II. A. Korner: Hormonal control of protein biosynthesis.
- III. E. Klein: Inborn errors of iodine metabolism.
- IV. H. K. A. Visser: Inborn errors in the biosynthesis of adrenal corticosteroids.
- V. J. Bierich and W. Lenz: Chromosomal aberrations in endocrinology.

II. ABSTRACTS OF SHORT PAPERS

ACTH

- 1. S. Pesonen, S. Strandström and B. A. Lamberg: Effect of a β -¹⁻²⁴tetracosapeptide (30'920-Ba Ciba) on the plasma corticoids and the urinary 17-KS and 17-OHCS.
- 2. H. G. Vogel: Evaluation of synthetic peptides with ACTH-activity.
- 3. A. Pekkarinen: Bioassay of corticotrophin preparations with the international working standard on living guinea pigs.
- 4. J. Kracht, U. Hachmeister, H. J. Breustedt and K. Fischer: Immunohistological studies on the pituitary ACTH-production sites using anti- β -¹⁻²⁴corticotropine.

ANDROGENS

- 5. F. Szarvas, K. Becker and J. Lindner: Leydig-cell hyperplasia following subtotal orchidectomy in rats.
- 6. T. D. Glover: Changes in blood flow in the testis and epididymis of the rat following artificial cryptorchidism.
- 7. R. Hesselsjö, S. Bengmark and S. Nilsson: Hormonal dependence of the male accessory reproductive glands — an experimental study in the rat.
- 8. H. E. Swanson and J. J. van der Werff ten Bosch: Effects of prenatal testosterone propionate on the development of the "early-androgen" syndrome in the female rat.
- 9. T. Lunaas and W. Velle: The effect of gonadotrophins and synthetic gestagens on testicular steroid secretion in swine.
- 10. F. Neumann and R. von Berswordt-Wallrabe: Effects of a new anti-androgen, 1,2 α -methylene, 6-chlor- Δ^6 -17 α -hydroxyprogesterone-17-acetate (SH 714), on the testicular structure of adult testosteronepropionate(TP)-treated hypophysectomized rats.

11. A. Saure: Studies of the metabolism of some androgens in the human placental tissue in vitro.
12. H. G. Lippmann and G. Mohnike: Plasma-amino-nitrogen and anabolic steroids in eviscerated, nephrectomized rabbits.
13. S. Mancuso, S. Dell'Acqua, G. Benagiano, N. Wiquist and E. Diczfalusy: Metabolism of testosterone and androstenedione in the human foetus.
14. P. Fylling: Conversion of androst-4-en-3,17-dione to testosterone in human blood in vitro.
15. A. Ismail and R. A. Harkness: The estimation of testosterone in urine.
16. M. Apostolakis, Z. Starčević and K. D. Voigt: Testosterone excretion during the menstrual cycle.
17. J. Tamm, M. Apostolakis and K. D. Voigt: The effect of HCG and ACTH administration on testosterone excretion in male subjects with various endocrinopathies.
18. K. Schubert, K. Wehrberger and G. Frankenberg: Excretion of α,β -unsaturated ketosteroids.
19. H. J. Degenhart, H. A. K. Visser, R. Wilmlink and L. Frankena: Production and excretion of testosterone in children with congenital adrenal hyperplasia and precocious puberty.
20. B. Loras, H. Roux, B. Cautenet, C. Ollagnon and J. Bertrand: Paper chromatography of urinary 17-ketosteroids in children of different ages.

CORTICOSTEROIDS

21. K. F. Støa, P. Lund-Johansen and T. Thorsen: A comparison of two methods for determination of aldosterone secretion rate.
22. A. F. Muller, R. Veyrat, R. Megevand, H. R. Brunner and E. L. Manning: Multifactor regulations of aldosterone.
23. J. R. Cox, M. M. Platts, M. E. Horn and H. Miller: The effect of aldosterone on the intracellular and extracellular sodium and potassium content in man.
24. Ch. Binder and M. Damkjær Nielsen: A case of adrenocortical insufficiency without hypoadosteronism in an 18-year old diabetic.
25. G. W. Oertel and P. Brühl: Free and conjugated steroids in cerebrospinal fluid.
26. G. Dörner and F. Stahl: Clinical application of a fluorometric routine method for estimating unconjugated 11-OHCS.
27. N. Norman, O. Trygstad and J. H. Vogt: The diagnostic application of metopirone, an evaluation.
28. J. Hammerstein: The metopirone test in amenorrhoeic women.
29. M. Damkjær Nielsen, Ch. Binder, J. Pedersen and M. Sprechler: The excretion of corticosteroid metabolites and pregnantriol in various types of Cushing's disease.
30. B. Weinheimer, G. W. Oertel, W. Leppla, H. Blaise and L. Bette: Adrenal venous plasma concentrations of 17-OH-progesterone and urinary pregnanetriol excretion in 10 cases of adrenogenital syndrome.
31. H. H. Bassøe: Congenital adrenal hyperplasia with hypertension in three adult brothers.
32. O. Buus, F. Bro-Rasmussen, D. Trolle and F. Lundwall: Adrenocortical function and the cortisol/cortisone ratio in the neonatal period.
33. W. M. Teller: Absence of puberty and its bearing on urinary C₁₉ and C₂₁ steroid metabolites.

34. D. Murphy and H. F. West: Urinary 17-hydroxycorticosteroids measured by gas chromatography.
35. F. Stahl and G. Dörner: The specificity of a simple routine method for the determination of unconjugated cortisol and corticosterone (11-OHCS) in urine.
36. P. Vecsei, D. Lommer, H. Steinacker and H. P. Wolff: Biosynthesis of corticosteroids during proliferation of the adrenal cortex.
37. D. Lommer and H. P. Wolff: Effects of angiotensin II and ACTH on corticosteroid biosynthesis in slices of bovine adrenal cortex.
38. P. Göbel: 3β -ol-dehydrogenase activity of the adrenals in acromegaly.
39. M. T. Jones and M. A. Stockham: Changes of indices of adrenal cortex activity in the rat after repeated stimuli.
40. H. Ueberberg: Investigations on lipid and cholesterol content of the adrenal cortex of rats after administration of pyridine-4-carbonic-acid-(dexamethasone-21'-)esters.
41. K. Flemming: Corticoid changes in X-ray irradiated animals.
42. J. G. Rausch-Stroomann and B. Kliman: Double isotope plasma cortisol in obesity and Cushing's syndrome.

ESTROGENS

43. R. Beltermann, H. E. Stegner and M. Breckwoldt: Electron microscopic observations in mice ovaries after administration of human hypophyseal gonadotropin (HHG).
44. R. B. Heap, J. S. Perry and I. W. Rowlands: The effect of hypophysectomy on the corpus luteum of the non-pregnant guinea-pig.
45. C. Krähenbühl: Effect of oestradiol and progesterone on successive phases of the ovulatory cycle in the rat.
46. K. P. Bland and B. T. Donovan: Implantation and the inhibition of oestrus in the guinea pig.
47. J. T. Velardo and B. Kasproy: Action of estradiol- 17β on the uterus and endocrine glands of rats 15 $\frac{1}{2}$ months after ovariectomy.
48. J. T. Velardo: Development of an experimental model system for the detection of estradiol-induced changes in uterine growth and pathology.
49. S. Dell'Acqua, S. Mancuso, G. Eriksson and E. Diczfalusy: Oestrogen formation from 19-nortestosterone and testosterone following *in situ* perfusion of human placentas at midterm.
50. U. Göbelsmann, G. Eriksson, N. Wiquist and E. Diczfalusy: Oestriol metabolism in pregnant women.
51. T. Thorsen and K. F. Støa: Oestradiol metabolism by human foetal liver slices *in vitro*. Identification of 6α -hydroxy-oestriol and 2-methoxy-oestriol.
52. W. P. Collins and I. F. Sommerville: The *in vitro* transformation of pregn-5-enolone-4- C^{14} by human gonadal tissue.
53. J. H. H. Thijssen: A gaschromatographic method for the measurement of small amounts of oestrogens in urine.
54. L. Ph. Bengtsson and B. Forsgren: Gas chromatographic determination of urinary oestriol and pregnanediol after foetal death.
55. V. A. Frandsen: A method for the estimation of small amounts of oestrone and 17β -oestradiol in human urine.
56. V. A. Frandsen: A clinical routine method for the simultaneous estimation of oestrone and 17β -oestradiol in human pregnancy urine.

GENETICS

57. H. Hortling, A. de la Chapelle, C. J. Johansson, M. Niemi and M. Sulamaa: Endocrinological observations in operated cases of cryptorchism.
58. A. de la Chapelle, H. Hortling, J. Wennström, M. Niemi and C. J. Johansson: Two males with female chromosomes.
59. J. G. M. Shire: Genetic variation in the structure and development of the mouse adrenal cortex.
60. F. M. Badr and S. G. Spickett: Genetics variation in adrenal weight relative to body weight in mice.
61. S. G. Spickett and F. M. Badr: Genetic variation in the timing of X zone involution in male mice.
62. J. Stewart and S. G. Spickett: Genetic variation in water and electrolyte metabolism in mice.

GESTAGENS

63. A. Oriol-Bosch and E. B. Romanoff: *In vitro* acetate-1-C¹⁴ metabolism by the bovine corpus luteum (C.L.).
64. K. Fotherby, S. Kamyab and A. I. Klopper: Metabolism of norethisterone in humans.
65. J. Starup and E. Østergaard: The effect of PMS and HCG observed at laparotomy in patients treated with 6-dehydro-6-methyl-17-acetoxy-progesterone(DMAP) + ethinyl-oestradiol-3-methyl-ether(mestranol).
66. J. Starup, V. Sele and O. Buus: The function of the pituitary and the adrenal cortex in patients treated with 6-dehydro-6-methyl-17-acetoxy-progesterone(DMAP) + ethinyl-oestradiol-3-methyl-ether(mestranol).
67. E. Østergaard, J. Arends, C. Hamburger and S. G. Johnsen: Postponement of menses, supression of urinary gonadotrophin 17-KGS and 17-KS in normal women treated with a megestrol-acetate/mestranol combination (Delpregnin) form day 20 of the cycle.
68. R. H. H. Richter, M. Arnold and F. Roth: Clinical observations and steroid excretion values in patients treated with megestrol acetate-estrogen combination.
69. C. Hamburger: Administration of progesterone in the form of suppositories.
70. J. de Visser and T. Roos: Cornification of vaginal epithelial cells of rats after intravaginal administration of nonsteroid and inorganic substances.
71. G. K. Suchowsky, G. Baldratti, E. Scracia and A. Arcari: Biological activities of ciclofarluta.
72. M. Hren: Clinical experiences with ciclofarluta.

GONADOTROPHINS

73. E. T. Bell, S. Mukerji, J. A. Loraine and S. F. Lunn: The relationship of gonadotrophin excretion to ovulation during the menstrual cycle.
74. H. Schmidt-Elmendorff: The urinary excretion of FSH-, LH- and total gonadotrophic activity during the normal menstrual cycle estimated by biological and immunological assay methods.
75. M. Furuholm, N. O. Lunell and E. Odeblad: Some effects of human menopausal gonadotrophin on amenorrhic women.

76. H. Schmidt-Elmendorff, W. Schild and A. Seuken: An investigation into the effect of large doses of HCG on plasma oestrogen and progesteron levels in late pregnancy.
77. A. C. Crooke: Gonadotrophin sensitivity test.
78. E. Daume and R. Kaiser: Signs of ovulation and consecutive pregnancies after ovarian stimulation in amenorrhoeic women by HMG and HCG.
79. A. Aakvaag, N. Norman and J. H. Vogt: Urinary steroid excretion in response to stimulation with gonadotrophins in the human male.
80. C. Lauritzen: Investigations on chorionic gonadotrophin and some actions of steroidal hormones in the newborn.
81. P. J. Czygan, M. Breckwoltd and G. Bettendorf: Purification of FSH and LH from human hypophyseal gonadotropin.
82. P. Visutakul, E. T. Bell, J. A. Loraine and R. B. Fisher: Effects of urea on the biological activity of gonadotrophic hormones.
83. N. O. Lunell, E. Odeblad and M. Furuholm: Quantitative determination of FSH-activity by means of radio-sulphate uptake of infant mouse ovary.
84. E. Gans and G. P. van Rees: A sensitive and specific assay method for follicle stimulating hormone (FSH): testicular growth in hypophysectomized immature rats treated concomitantly with human chorionic gonadotrophin (HCG).
85. S. Uhlarik and H. Schmidt-Elmendorff: Comparative estimations of various gonadotrophins by LH specific biological and immunological assay methods.
86. J. Haller and A. König: Comparative examinations on immuno-haematological and biological methods of determining pituitary gonadotrophins.
87. U. Laschet and L. Laschet: Biochemical aspects of the quantitative immunological assay of human pituitary gonadotrophins.
88. P. Weiser: Method and results of immunological determination of pituitary gonadotrophin.

GROWTH HORMONE

89. W. M. Hunter and W. M. Rigal: Plasma growth hormone in children at night and following a glucose load.
90. H. G. van Riet, W. Schopman and F. Schwarz: Serum growth hormone levels and protein metabolism in obese patients treated with periods of total starvation.

HORMONES AND ENZYMES

91. J. Drews and A. Wacker: Mechanism of steroid initiated enzyme induction.
92. P. Scriba: Effect of adenocorticotropin of adenosin-3', 5'-monophosphate on in vitro adrenal protein synthesis.
93. K. Ahrén, L. Hamberger and L. Rubinstein: Effects of pituitary gonadotrophins on amino acid transport, protein biosynthesis and glucose metabolism in isolated rat ovaries.
94. H. Schmidt, H. Walther and K. D. Voigt: The influence of estradiol on the nucleic acid, protein and enzyme activity content of the rat uterus.
95. K. D. Schulz, P. Plate, H. Maass and G. Bettendorf: Changes in NAD-specific 17- β -hydroxy-steroiddehydrogenase activity in the microsomal fraction of female guinea-pig liver dependent on age, ovariectomy and estrogen or gonadotropin administration.

96. W. R. Külpmann and K. O. Mosebach: Influence of testosterone on the incorporation of L-histidine-¹⁴C into the proteins of some sexual and other organs of starving immature rats.
97. H. Boström and B. Wengle: On phenol and steroid sulphokinases in adult human tissues.
98. B. Wengle: Distribution and properties of some steroid sulphokinases in foetal human tissues.
99. T. P. J. Vanha-Perttula: On the ovarian enzymes hydrolysing leucyl- β -naphthylamide.
100. T. P. J. Vanha-Perttula: Rat adenohypophyseal enzymes hydrolysing leucyl- β -naphthylamide.
101. G. Löffler, H. Geerling and K. F. Weinges: Hormone-sensitive lipase system in adipose tissue.

INSULIN

102. R. Luft and E. Cerasi: Insulin response to glucose infusion in obesity and mature-onset diabetes.
103. A. E. Gonet, J. Mougin and A. E. Renold: Hyperplasia and hypertrophy of the islets of Langerhans, obesity and diabetes mellitus in the mouse *acomys dimidiatus*.
104. K. F. Weinges, H. Geerling, H. J. Angel, G. Löffler and G. Harbauer: Studies of hepatic influence on insulin concentration in peripheral blood.
105. J. P. Felber, A. J. Moody and A. Vannotti: Diminished pancreatic response to glucose as a factor in the genesis of diabetes.

KATECHOLAMINES

106. H. Liebau, A. Distler and H. P. Wolff: The noradrenaline releasing effect of angiotensin II in isolated blood vessels.
107. V. Laajoki, V. Konu and A. Pekkarinen: The experimental hypertension in rats by prolonged administration of adrenaline and noradrenaline.
108. A. Pekkarinen, E. Iisalo, A. Hakulinen, M. Linna and U. Rinne: Excretion of vanilmandelic acid in normal and clinical conditions.
109. A. Pekkarinen, K. Manninen and M. Mäenpää: Regulation of the adrenomedullary secretion by drugs during the insuline shock in rats.

LIPID MOBILIZING FACTOR

110. J. E. Vincent and J. W. de Vries: Some effects of a lipid mobilizing preparation of pituitary origin.
111. Z. Laron and A. Kowadlo-Silbergeld: Lipolytic activity of enzyme digested human growth hormones.
112. O. Trygstad: A lipid mobilizing peptide prepared from human pituitaries.

NEUROENDOCRINOLOGY

113. G. H. Zeilmaker and J. Moll: Effects of progesterone on hypothalamic induction of ovulation in the 5-day cyclic rat.
114. J. Moll and G. Zeilmaker: Induction of ovulation by hypothalamic stimulation in castrated male rats bearing ovarian transplants.

115. A. M. Rakha and H. A. Robertson: The precise timing of the release of gonadotrophins at ovulation.
116. F. Döcke and G. Dörner: Experimental studies on the positive feed-back effecting induction of ovulation by oestrogen.
117. W. Ladosky, D. M. Cancado and J. G. L. Noronha: Presence of corpora lutea in female rats with permanent estrus.
118. P. Rantanen, K. Fagerström and A. Pekkarinen: The neurogenic influence of cats on the uptake and release of J_{131} of the thyroid gland of mice.
119. E. Gallardo and H. J. Campbell: The influence of age on the concentration of gonadotrophin-releasing factor in the median eminence.
120. M. A. David, F. Fraschini and L. Martini: Significance of changes in hypothalamic concentration of follicle stimulating hormone-releasing factor (FSH-RF).
121. F. G. Sulman: Mechanism of hypothalamic lactation.
122. J. T. Eayrs and J. A. Edwardson: Neuroendocrine interactions in the maintenance of lactation.
123. M. Legori, M. Motta, M. Zanisi and L. Martini: "Short feedback loops" in ACTH control.

PARATHYROID

124. P. Fourman and P. M. Leeson: Comparison of vitamin D₃ in hypoparathyroidism.
125. H. Egert and H. Puxkandl: Experiences with the EDTA-test of parathyroid insufficiency.

PITUITARY

126. T. C. A. Kumar: Structure and histochemistry of the pituitary gland in the slender loris *Loris tardigradus lydekkerianus* Cabr. (Primates).
127. K. Lederis: Electron microscopy of the human anterior pituitary.
128. E. Stöcker and G. Dhom: The nuclear RNA-synthesis in the anterior pituitary of rats.
129. C. A. Feltkamp and H. G. Kwa: Transformation of pituitary tumours from prolactin-into TSH-cell types. I. Electron microscopical observations.
130. K. G. Kwa and C. A. Feltkamp: Transformation of pituitary tumours from prolactin-into TSH-cell types. II. Endocrine aspects.

PROLACTIN

131. H. J. Breustedt, M. Apostolakis and J. Kracht: Immunohistological studies on the pituitary with an human prolactin antiserum.
132. Z. Laron, S. Assa and M. Apostolakis: Immunological studies of a human prolactin preparation.
133. H. G. Kwa: Isolation of prolactin from a sub-cellular fraction of transplanted pituitary tumours.
134. R. Blobel: An assay of prolactin based on the excretion of pregnanediol in hypophysectomized, adrenalectomized rats.
135. F. J. A. Prop: A sensitive and accurate method for the dosage of prolactin.

136. U. Herlyn, I. von Berswordt-Wallrabe und R. von Berswordt-Wallrabe: A log dose response curve for prolactin, as measured by the decidual cell reaction in the hypophysectomized, HCG-treated rat.
137. I. von Berswordt-Wallrabe, U. Herlyn and K. Jantzen: A modification of the pigeon crop sac assay for determination of lactogenic hormone (prolactin) in human serum.

PSYCHOENDOCRINOLOGY

138. F. Halberg and C. Hamburger: Electronic computer techniques for the study of endocrine rhythms.
139. M. Frisk, T. Tenhunen, O. Widholm and H. Hortling: Psychological problems in adolescents with advanced and delayed development.
140. G. Lindqvist: Psychic complications after hypophysectomy.
141. J. Herbert and R. P. Michael: The endocrine aspects of sexual behaviour in rhesus monkeys.
142. F. Neumann and W. Elger: Physiological and psychical intersexuality of male rats by early treatment with an anti-androgenic agent (1,2 α -methylene-6-chloro- Δ^6 -hydroxyprogesterone-acetate).
143. A. E. Meyer and P. Munkelt: Hair growth disturbances in adult females. I. Endocrine, psychological and body build variables of different subgroups compared with each other and with controls.
144. P. Munkelt and A. E. Meyer: Hair growth disturbances in adult females. II. Internal dimensions (factor analysis) of endocrine, body build, psychological and hair growth variables.
145. S. M. Milcu, M. Stan and E. Semen: Endocrine psychosyndromes.

THYROID

146. Ch. Binswanger, H. Studer, R. Gubler and F. Wyss: Extrathyroidal effects of propylthiouracil in man.
147. G. Laubinger, K. Reich and H. W. Bansi: Some observations on a large group of hyperthyroid patients.
148. B. Malamos, K. Miras, P. Kostamis and D. A. Koutras: Endemic goitre in Greece: pilot study of a village.
149. B. A. Lamberg, G. Hintze and V. Kivikangas: Iodine metabolism in autoimmune thyroiditis.
150. H. G. Heinze, G. Hör, K. W. Frey and A. Sonntag: The triiodothyronine-suppression-test as an adjunct to radioiodine-function study of thyroid.
151. F. Schwarz, F. Brummer and P. J. der Kinderen: A "long-term" modification of McKenzies LATS assay.
152. P. J. der Kinderen and M. Houtstra-Lanz: The separation of EPS and a factor antagonistic to it in the serum of normal persons and of exophthalmic patients.
153. F. A. Horster and E. Klein: Influence of prednisone and D-thyroxine on thyrotropin (TSH), long acting thyroid stimulator (LATS) and exophthalmos producing factor (EPF) in the serum of euthyroid endocrine ophthalmopathy.
154. W. de Jong and D. de Wied: Effect of potassium thiocyanate (KCNS) on blood pressure and thyroid function in the albino rat.

155. Z. Skrabalo: Cytochemical methods in the study of thyroid functions.
156. H. J. Schmidt, N. Henning, F. Scheiffarth, S. Witte, E. Wolf and G. Kleyensteiber: Results of examination of thyroid needle biopsy, using karometric and stain techniques.
157. I. Črepinko, Z. Skrabalo and E. Hauptmann: Cytochemical findings in the thyroid of patients with hypothyreosis.
158. G. Gries and J. Lindner: The influence of thyroid function on connective tissue (clinical and experimental results).
159. G. E. Boer: Basedow's following splenectomy.
160. R. Landgraf, H. G. Heinze, K. Schwarz and P. C. Scriba: Clinical evaluation of determinations of free and serum protein bound triiodothyronine (dextran gel filtration).
161. R. Höfer and H. Schatz: Clinical significance of thyroïdal autoantibodies.
162. R. Höfer and E. Ogris: A new method for increasing the sensitivity of the BMR.

MISCELLANEOUS

163. J. R. Coleman and K. Lederis: Urinary gonadotrophins in patients with advanced mammary carcinoma.
164. D. C. Williams: The selection and transplantation of hormone sensitive tumours.
165. R. J. B. King and J. Gordon: Intranuclear localization of [6,7³H] oestradiol in DMBA-induced rat mammary tumours.
166. A. Attramadal: The uptake and intracellular localization of tritiated oestradiol in the uterus of ovariectomized rats following intramuscular administration.
167. D. Glaubitt and C. Overzier: Turnover studies with ¹³¹J serum albumin in diseases of the pituitary gland and adrenal cortex.
168. I. von Berswordt-Wallrabe and R. von Berswordt-Wallrabe: Prolongation of the uterine sensitivity for the decidual cell reaction (DCR) during galactopoiesis in primiparous rats.
169. F. B. Zener: Fetal salvage in placental insufficiency due to adrenal androgenic hyperfunction.
170. L. Ph. Bengtsson and G. W. Theobald: Experiments on the endocrine control of the activity of the nonpregnant human myometrium.
171. W. Hohlweg and G. Reifensstuhl: LH-secretion before, during and after treatment with ovulation inhibitors.
172. J. F. Sommerville, B. M. Scheerin, W. P. Collins and H. Wyman: The application of gas-liquid radiochromatography to the quantitative determination of steroids in the peripheral venous blood of non-pregnant women.

READ BY TITLE

173. J. Gasch and W. W. Kühnau: X-ray changes by dermatoses with endocrine disorders.
174. E. O. Höhn: Gonadal steroid hormones in phalaropes and certain other birds in relation to plumage and sex behaviour in phalaropes.
175. H. Adlercreutz and T. Luukkainen: Gas chromatographic methods for urinary oestrogens.

CLINICAL EVALUATION OF DETERMINATIONS OF FREE AND SERUM PROTEIN BOUND TRIIODOTHYRONINE (DEXTRAN GEL FILTRATION)

R. Landgraf, H. G. Heinze, K. Schwarz and P. C. Scriba

II. Medizinische Klinik und Riederinstitut, Universität München

From incubation mixtures of serum and Radiothybon® so-called free, serum protein bound triiodothyronine-I-131 and iodide-131 were separately determined by means of dextrangel-filtration using a convenient batch technic. The normal ranges ($\bar{x} \pm 2$ S.D.) for protein bound T3 in serum of 39 euthyroid subjects were 78.8 to 89.7 %, and 18.9 to 10.5 % for so-called free T3, which is absorbed by sephadex. In one (toxic adenoma) of 24 cases of thyrotoxicosis values for free and bound T3 were within the normal range. In 19 hypothyroid patients however means and 42, resp. 63 % of the values of free and bound T3 fell within the normal range. Lowering the specific activity of triiodothyronine-I-131 by addition of nonlabeled T3 (0.5 μ g T3/ml) increased the ratio of free and bound T3 significantly less in hypothyroidism than in euthyroidism: means and 56, resp. 63 % of hypothyroid values of free and bound T3 were distinct from the normal range (15.2 to 30.2 %, resp. 68.3 to 84.2 %). Differentiation of hypothyroidism and euthyroidism was also improved by subjecting incubation mixtures to columns with 5.1 g instead of 1.8 g Sephadex G-25®, the larger amount of dextrangel binding in competition with serum proteins less T3 in cases of hypothyroidism. Avoiding iodine-131 administration to patients the technic of dextrangel-filtration was found especially helpful for thyroid diagnosis in cases with complicating factors, such as treated goiters or hyperthyroidism, or as euthyroid or hyperthyroid exophthalmos, all showing frequently increased iodine-131 turnover rates. Administration of iodine (e.g. X-ray procedures etc.) had no influence on so-called free and protein bound triiodothyronine.