COMBINED CONFERENCE
ON
ENDOCRINE AND METABOLIC
DISORDERS

AT
NATIONAL TAIWAN UNIVERSITY HOSPITAL
TAIPEI, TAIWAN
REPUBLIC OF CHINA

MARCH 5, 1978.
COMBINED CONFERENCE
ON
ENDOCRINE AND METABOLIC DISORDERS

AT
NATIONAL TAIWAN UNIVERSITY HOSPITAL
TAIPEI, TAIWAN
REPUBLIC OF CHINA
MARCH 5, 1978
CONTENT AND PROGRAM

Time: March 5, 1978
Place: The 7th Hall, NTUH

Welcome ................................. S.H. Tsai

   ( 吳桂卿 ) ( 萬家茂 ) ( 彭明聰 )
   Department of Physiology, College of Medicine, National Taiwan Univ. ( 台大醫學院 生理學科 )
   2:10-2:30

2. Lithium-Induced Diabetes Insipidus (DI) in Manic-Depressive Psychosis
   ( 蔡瑞熊 ) ( 陳煒倫 ) ( 隨永勳 ) ( 黃吉志 ) ( 蘇義華 )
   Department of Internal Medicine and Neuro-Psychiatry Kaohsiung Medical College ( 高雄醫學院 內科及精神神經科 )
   2:30-2:50

3. Report on A Case of Ectopic Hyperparathyroidism
   G.C. Chen, H.D. Lin, K.N. Ching and T.K. Yun
   ( ( ( ) ) ( ) ( ) )
   E-M division, Department of Internal Medicine V.G.H.
   ( 榮民總醫院 內科 )
   2:50-3:10

4. A case of primary hyperparathyroidism Dept.. Int. Medicine Jen Ai Hospital ( 仁愛醫院 內科 )
   S.H. Lee L.S. Lee C.P. Siauw P.H. Chen
   ( 李世虎 ) ( 李龍雄 ) ( 蕭泉豹 ) ( 陳寶輝 )
   Dept. Uro. Chang Gung Hospital ( 長庚醫院泌尿科 )
   M.S. Huang ( 黃敬雄 )
   Dept. Surg. Veterans General Hospital ( 榮總外科 )
   C.Lee ( 李杰 )
   3:10-3:30

5. Pseudopseudohypoparathyroidism with hyperthyroidism
   C.C. Chang and F.W. Chen Dept. of Internal Medicine, NTUH
   ( 張慶忠 ) ( 陳方武 ) ( 台大內科 )
   3:30-3:50

   INTERMISSION
   3:50-4:10

6. A case report of para-sellar cholesteatoma
   S.L. Lee H.D. Lin L.Y. Shen T.K. Yun
   ( ( ) ( ) ( ) )
   Dept. of Int. Med. V.G.H. ( 榮總內科 )
7. Thyrotropin-Releasing Hormone Stimulation Test in patients with pituitary & hypothalamic Disorders.
   H. D. Lin, W. H. Lin, K. N. Ching, T. K. Yun
   Department of Internal Medicine V. G. H. 4:30-4:50
   (榮總內科)

8. The Wermer's syndrome (Men Type 1)
   Chien-Hsien Lee, and Chieh Lee
   Division of General Surgery, Veterans General Hosp.
   (榮總一般外科) 4:50-5:10
   (李建賢) (李傑)

9. Blood Lipids in Treated Diabetics
   T. C. Lin L. R. Shian H. W. Hwang P. C. Chu
   Dept. of Int. Med, T. S. H. (三軍總醫院內科) 5:10-5:30

10. Oral Fructose Tolerance of Diabetic Patients
    Tong-Yuan Tai Shih-Hsien Tsai NTUH
    (戴東原) (蔡詩顯) (台大內科) 5:30-5:50

11. Treatment of Diabetic Coma with Continuous Intravenous Infusion of Small-Dose Insulin: Experience of 14 Cases
    Tong-Yuan Tai and Shih-Hsien Tsai NTUH
    (戴東原) (蔡詩顯) (台大內科) 5:50-6:10

Attention Please!! Presentation should be completed within 15 minutes.
Pituitary LH and FSH Secretion of Intact and Gonadectomized Old Rats.

K. M. Wu 吳桂蒙
Walter C. M. Wan 萬家茂
AND M. T. Peng 彭明聰

Department of Physiology, College of Medicine, National Taiwan University

In order to see the gonadotropin secretory dynamics and its regulatory mechanism of old rats (2 years old), both females and males, LH and FSH concentrations in pituitaries and serum were measured in intact and gonadectomized rats and were compared with young adult rats (3 to 5 months old). Pituitaries were aceton dried. LH and FSH were measured by NIAMD-Rat LH-RIA kit and NIAMD-Rat FSH RIA kit.

1. Pituitary and serum LH concentrations were not significantly different among young adult female rats in estrus and in diestrus, prolonged vaginal cornification (PVC) old rats and anestrus (ANE) old rats. The post-ovariectomy rise of pituitary and serum LH concentrations were much lower in PVC rats and ANE rats than young adult rats $(p < 0.01)$.

2. Pituitary FSH concentrations were not significantly different among young rats in estrus, in diestrus, PVC rats and ANE rats, Serum FSH level of PVC rats was higher than young rats $(p < 0.01)$, and that of ANE rats was not different from that of young rats. The post-ovariectomy rise of pituitary and serum FSH concentrations in PVC rats $(p < 0.01)$ and ANE rats $(p < 0.05)$ was lower than that of young ones.

3. The pituitary LH concentration of intact old male rats was significantly lower than that of intact young males $(p < 0.01)$ The serum LH level of the former showed a tendency of decrease as compared with that of the latter, but not to the level of statistical significance. No post-castration rise of pituitary LH concentration was observed in old male rats, but the post-castration rise of serum LH level was not different between old males and young males.

4. The pituitary FSH concentration of intact old male rats had a tendency of decrease but not to the level of statistical significance and the serum FSH level of intact old male rats was significantly higher than that of intact young males $(p < 0.01)$. The post-castration rise of pituitary and serum FSH levels of old males was not significantly different from that of young males.

5. The results indicate that the response of the hypothalamic-pituitary-
axis of old PVC rats and ANE rats to negative feedback action of estrogen seems to be decreased but that of old male rats seems to be still intact except for pituitary LH level.
Lithium-Induced Diabetes Insipidus (DI) in
Manic-Depressive Psychosis


Department of Internal Medicine and Neuro-Psychiatry
Kaohsiung Medical College
(內科及精神神經科高雄醫學院)

It is suggested that the lithium salt inhibits vasopressin-stimulated
adenylate cyclase of renal tubules. In this study, the concentration
capacities of 4 manic-depressive psychoses (all female, age: 19-43)
with long term (1.2-4.5 years) lithium salt therapy were studied by
dehydration-pitressin test. All patients showed normal creatinine
clearance and thyroid function.

During the psychotic episodes, all patients experienced polyuria
and polydipsia. While during remission period, one had polyuria for
1 year and the other one had persistent polyuria since the beginning
of lithium therapy.

The 3 patients who showed no polyuria during the test gave the
maximal urine osmolalities (Uosm): 850-950 mOsm/kg H_2O, the
maximal plasma osmolalities (P_{osm}): 282-291 mOsm/kg H_2O and the
minimal free-water clearances (CH_2O): -0.24-0.7 ml/min during 17
hours of water deprivation. No more increment of the concentration
capacity was found after injection of 5 u. aqueous pitressin.

The other one who showed persistent polyuria gave the maximal
U_{osm}: 384 mOsm/kg H_2O, P_{osm}: 297 mOsm/kg H_2O and the minimal
H_2O : + 0.2 ml/min during dehydration period. After pitressin injection,
her maximal U_{osm} was 285 mOsm/kg, P_{osm}: 286 mOsm/kg and the
minimal CH_2O was +3.2 ml/min. Thus, DI of nephrogenic origin was
diagnosed in this case.

The doses of lithium carbonate of those 3 patients with normal renal
concentration capacity were 600-900 mg/day and the serum lithium
concentration were 0.9-0.8 mEq/l. The dose for the DI patient was
1800 mg/day with serum lithium concentration of 1.2 mEq/l.

It is concluded that 1 of 4 patients in lithium induced nephrogenic
DI. As for the other 3 cases, the possibility of transient DI during the
earlier period of lithium therapy could not be ruled out.
Report On A Case of Ectopic Hyperparathyroidism

G. C. Chen, H. D. Lin, K. N. Ching and T. K. Yun
E-M division, Department of Internal Medicine
V. G. H.

Case:
Renal cell carcinoma, left kidney with ectopic hyperparathyroidism
A male veteran, aged 52 had been well until May 1976, when he developed afternoon fever and abdominal fullness. He was admitted in June 1976. On admission, no abnormal findings were found on physical examination. Infectious routine was also non-conclusive. Patient was discharged 3 weeks later with the impression of "F.U.O."

After the discharge, the low grade fever persisted, so he was admitted again in July 1976. Physical examination revealed a moderately developed and moderately nourished male adult, with pale and chronic ill-looking, BP was 130/80 mmHg, PR 72/min., BT 37.2° C, liver 2F.B. below the R.C.M., knocking-pain over right CV angle.

Hemoglobin was 8.5 gm%, the WBC 8950 with N/L/E=72/25/2%
The ESR was 42 mm/hr. Bone marrow aspiration showed erythroid hyperplasia. The serum calcium was 12 mg% (normal: 8.5-10.5 mg%), inorganic phosphate 2.8 mg% (normal: 2.1-4.7 mg%) and alkaline pyrophosphatase 70 mu/ml (normal: 20-90 mu/ml). Serum calcium on 5 occasions was 11.7-16 mg% (mean 13.25 mg), phosphate 1.6-3.5 mg% (mean 2.55 mg%) and alkaline phosphatase 150-180 mu/ml (mean 167 mu/ml). The urinalysis showed trace protein, 24 hrs urine calcium 770 mg and phosphate 1430 mg (on low calcium and high phosphate diet). T.R.P. was 77.8%, EKG compatible with hypercalcemia. The BUN was 14mg% creatinine 1mg% and creatinine clearance 71 ml/min. The liver function test was normal.

Barium enema showed an extrinsic compression over splenic flexure, IVP disclosed outward distortion of upper pole and calyces system of left kidney. Renal scan showed a round mass a about 5cm in diameter in the upper pole of left kidney with good perfusion. Renal angiogram showed enlarged left renal artery with tumor vessels and stain with AV shunt. Long bone series and whole body bone scan showed no metastatic lesions.

On Aug. 19, 1976 during the hospitalization, he suddenly developed gross hematuria associated with nausea, vomiting and abdominal pain. Physical examination revealed knocking pain over left CV angle.

Radical nephrectomy, left was done on Sep. 1976. At operation, tumor mass measured 11x7.5x5cm was found occupying the upper pole of left
kidney, enlarged paraaortic lymph node and intravascular invasion of renal vein was also noted. Histology showed a renal cell carcinoma with invasion beyond the capsule and tumor emboli of left renal vein.

Serum calcium fell to 9.2 mg\% and the phosphate rose to 4.8 mg\% by the second postoperative day. The temperature fell to normal one week postoperatively. Radiotherapy with total 5000 rads was given.

He was readmitted in May 1977 due to low grade fever, loss of body weight, nausea, anorexia and abdominal fullness for one month. The serum calcium was 10-14.2 mg\%, inorganic phosphate 1.7-33 mg\% and alkaline phosphatase 75-265 mu/ml, 24 hours urine calcium was 301 mg, phosphate 570 mg, TRP 71\% (on calcium 700 mg, phosphate 1000 mgqd). IVP showed suspicious space occupying lesion with displacement of calyces system of right kidney. Gallium scan showed increased radioactivity at right retroperitoneal region in favor of multiple metastasis. Long bone series, skull X-ray and whole body bone scan showed no metastatic lesions. Recurrence of renal cell carcinoma was considered.

Chemotherapy with Bleomycin 15 mg BIW was given since Sep. 8, 1977. Serum calcium and phosphate fell to normal (Calcium 9.7 mg\%, phosphate 2.7 mg\%) 40 days later after chemotherapy. Now the patient was followed up at OPD.
A Case of Primary Hyperparathyroidism.

Int. Medicine Dept.  Jen Ai Hospital.  仁愛醫院內科
S. H. Lee.  李世虎
L. S. Lee.  李世雄
C. P. Sialw.  薛泉豹
P. H. Chen.  陳寶輝

Uro. Dept. Chang Gung Hospital.  長庚醫院泌尿科
M. S. Huang.  黃敏雄
Surg. Dept. Veteran General Hospital.  楊競醫院外科
C. Lee.  李 杰

The patient 梁 XX XX, a 25 years old male was admitted to medical Ward on Nov. 14, 1977 because of generalized bone discomfort especially pain over both hands and heels which was associated with nausea and constipation for 2 to 3 weeks. He had history of frequent bone soreness of his limbs for these last 2 years, which lumbago ensued on Sept. 1977. He was admitted to Chang Gung Hospital with evidence of left ureterolithotomy was done on Oct. 1, 1977.

One week post operation he complained general weakness, muscle discomfort and pain over his hands and heels. Accidentally hypercalcemia with osteoporotic changes was found after operation.

Physical examination upon admission revealed moderate developed and moderate nourished, slight kyphotic appearance young man with marked tenderness over his both hands and heels.

Blood biochemical studies revealed hypercalcemia (16.8-17.5mg/dl) hypophosphatemia (2.0-2.7mg/dl), elevated Alk-P-ase (19-33 B-LU/L), Cl. (102-118 meq/dl), Na (142.5-159 meq/dl) and slight decreased Mg. (1.1 meq/dl).

On his usual diet, 24 hours urine calcium varied from 575-1811 mg/dl and 24 hours urine phosphate was 550-888 mg/dl.

TRP was 67.3% while he took regular diet. Blood Calcium on Dec. 3, 1977 was 14.2 mg/dl after Prednisolone Suppression Test with oral prednisolone 40 mg/day for 10 days. X-ray films of the skeletal system showed diffusely osteoporosis with osteitis fibrosa cystica changes on both phalanges and brown tumor formation noted on one of humerus. X-ray of teeth showed loss of lamina dura. EKG revealed shortened QT interval with LVH. Thermography of neck was a positive Thermogram.

The patient received neck exploration on Dec. 21, 1977 at VGH. Left lower parathyroid tumor, 5 gm in weight, 3 x 1.5 cm. in size with lobulated surface was found. Histopathological diagnosis was Parathyroid Adenoma (left lower), with chief cells predominant.

He became normocalcemia (9.3 mg/dl) and normophosphatemic (3.4 mg/dl) On Jan. 10, 1978.
Pseudopseudohypoparathyroidism with Hyperthyroidism

C. C. Chang and F. W. Chen
Department of Internal Medicine, NTUH

A 20-years-old female college student, native of Canton, was admitted to NTUH with the chief complaints of recurrent palpitation, sweating and bad temper for 5 months.

At age of 17-years-old, the patient began to suffer from palpitation, sweating, nervousness, fatigability, polyphagia, loss of body weight and irregular menstruation. Under the impression of hyperthyroidism, she was treated by a local practitioner for one year. The symptoms subsided apparently, and she discontinued the medications. Unfortunately, the above mentioned symptoms recurred in Sept. 1977. She was referred to our OPD on Oct. 26, '77. Laboratory examination revealed T4 25 µg/dl, T3 66.5 ng/dl, TSH 1.3 µU/ml. I131 TU: 73% (2hr), 85% (24 hr), serum Ca 10.5 mg/dl, P 3.7 mg/dl, Alk-Ptase 9.6 KAU. Antithyroid regimen including Tapazole 30 mg, Inderal 60 mg daily was given since Dec. 2'77. Then she was admitted on Jan. 4, '78.

Past history revealed she was born normal spontaneously with a full term gestation period. At age of 10 yrs-old, nephritis manifested as puffy face and lower leg edema was diagnosed and treated by a local practitioner. At age of 16 yrs-old, poor vision, eye fatigability and frequent muscle cramp of bilateral soles, duration several seconds, annoyed her that she might fell on the ground when she across the road. This symptom subsided spontaneously one year later. She had never suffered from tetany, convulsion, seizure, nor laryngeal spasm during the past years. Menarche at age of 14, irregular, interval 30-40 days previously, but 14-21 days during recent 5 months, duration 5 days with moderate amount.

Family history revealed no consanguinity between father and mother. Both her mother and grandmother were with short stature.

Physical examination revealed a moderately developed and slightly obese lady with clear and alert consciousness. BH: 141 cm, BW: 49.5 Kg. Bp 140/90, PR 114. The face was round, Neck was short. Thyroid was grade II diffusely enlarged and was firm in consistency. The chest, heart and abdomen were negative. The extremities were free movable. The metacarpal and metatarsal were short. Fingers (1st, 5th, 4th, 3rd) and nails were short. The 4th and 5th knuckle were absence.

After admission, the antithyroid regimen was discontinued, and various endocrine function tests were performed. Despite low calcium diet (Ca 125 mg daily) for 7 days, she remained normocalcemic. I. V.
calcium infusion test revealed normal suppression of phosphorus clear
clearance (Cp 11.5 and 1.1 ml/min., before and after calcium infusion,
respectively). The results of L-Dopa test, Chlorpromazine test and
TRH test were compatible with the diagnosis of hyperthyroidism. The
results of adrenal function test, glucose tolerance test and insulin test
will be presented. Renal function tests were within normal limit: BUN
16 mg/dl, serum Cr: 0.8 mg/dl, Cor: 71 ml/min., PSP test: 33%(15'),
77.2%(2hr). Chromosome study was 46, XX, female karyotype.
A Case Report of Para-sellar Cholesteatoma

S. L. Lee H. D. Lin L. Y. Shen T. K. Yun
Dept. of Int. Med V. G. H.

Patient Hwang, a 20 year-old single male, native of Taiwan, was rather well in his childhood except slight retardation of growth. Small genital organ, as compared with his classmates, and no growth of beard and mustache were noticed since his teenage. He didn't pay much attention to these abnormalities until recently something wrong was told during an OPD interview for his myopia. There was no history of head injury and ENT problem.

Physical examination disclosed absence of beard, mustache, axillary hair and pubic hair. Infantile genitalia with small testis, high-pitch voice, a shorter upper body segment and longer hand span were also found.

Laboratory data showed low baseline growth hormone level which failed to response to L-dopa test and I1HST, low cortisol level in AM. and PM. without response to I1HST, and low urine 17-KS, 17-KGS. T4L, T3, T4, FSH, and LH were also subnormal. Water loading, saling loading, concentration and dilution test, water deprivation test suggest partial D.I. Skull X-ray, carotid angiogram suggested pituitary tumor, and visual field mild constriction in both sides.

He received operation under the impression of pituitary adenoma, which was finally proved to be 'Cholesteatoma' by pathological study.
Thyrotropin-Releasing Hormone Stimulation Test in Patients with Pituitary & Hypothalamic Disorders

Dept of Int. Med. V.C.H.

The serum thyrotropin (TSH) response to 200 ug TRH intravenous injection was investigated in 15 patients with pituitary and hypothalamic disorders including 2 idiopathic hypopituitarism, 1 isolated growth hormone deficiency, 3 Sheehan's syndrome, 2 craniopharyngioma, 1 pituitary chromophobe adenoma, 1 parasellar cholesteatoma, 1 gigantism and 4 acromegaly. The pattern of TSH response to TRH was defined with respect to the magnitude of the increase and to the response curve. Only one case, isolated growth hormone deficiency, had normal TSH response to TRH. Six cases (1 idiopathic hypopituitarism, 2 Sheehan's syndrome, 1 craniopharyngioma and 2 acromegaly) had absent or impaired TSH response to TRH. Eight cases had either exaggerated, delayed, prolonged or in combination of these abnormal TRH response. Among the eight subjects, 6 had tumors with suprasella extension and one was hypothalamic dwarfism. Therefore, these abnormal TSH response patterns can be considered quite characteristics of hypothalamic disorders.
The Wermer's Syndrome (MEA Type I)

Chien-Hsien Lee, and Chieh Lee
Division of General Surgery, Veteran General Hosp.

A 27-year-old male veteran with Zollinger-Ellison syndrome and pituitary tumor was reported.

The patient had experienced repeated gastric surgeries before reaching an accurate diagnosis of ZES which was documented by the characteristic preoperative gastric juice analysis, high serum gastrin level and the hyperrugosity of the gastric mucosa as well as a pancreatic islet cell adenoma. A list of suspicion indices was submitted and the incidence of combination of a ZES with other endocrine adenoma was reviewed.
A Blood Lipids in Treated Diabetics

T. C. Lin; L. R. Shian;
H. W. Hwang; P. C. Chu.
Dept of Int Med T. S. H.

Blood lipids were determinated on 194 maturity onset diabetic patients receiving different form of treatment and with varying degree of control of their diabetes. There was no obvious difference of triglyceride or cholesterol level between good, fair and poor control of diabetes. The body weight of patients with high triglyceride levels (>150mg%) was 123.5% of IBW and those with normal triglyceride levels was 112.9% of IBW. The body weight had significant difference (p > 0.001) between those of two triglyceride levels.

The incidence of hypertension in the patients with abnormal high triglyceride or cholesterol level was higher than those with normal lipids level.

The incidence of raised cholesterol or triglyceride level was related to the age of the patients: the older patients (≥50 yr) had higher lipids level than the younger (< 50 yr).
Oral Fructose Tolerance of Diabetic Patients

Tong-Yuan Tai and Shih-Hsien Tsai
National Taiwan University Hospital

Main carbohydrate composition of many kinds of fruits is fructose. It is well established that oral intake of fructose may partially converted to glucose in vivo. Therefore, diabetic patients are usually instructed for restricted intake of sweety fruits. The present study is conducted to evaluate the validity of this proclivity. Nine diabetics, who are well controlled with dieting only (W.C.D., repeated blood sugar determinations reveal normal fasting levels and 2-hr postprandial levels are less than 150 mg%), and nine poorly controlled diabetics (P.C.D.), who are refractory to sulfonylurea drugs (Elevated fasting glucose concentration and 2-hr postprandial glucose level over 200 mg%), were studied with oral glucose and fructose tolerance tests (100 gm sugar in 400 ml water). For those treated with sulfonylurea drugs the medicine was discontinued 1 week prior to the test.

Nine normal subjects also underwent those two tests and used as controls. The results are given as means ± S.E.

Insulin peak delayed than BS peak.

No transient hypoglycemia.

WBC in urine related to diet.
### Results of Oral Glucose Tolerance Tests

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<th>Plasma Glucose (mg%)</th>
<th>Serum Insulin (uU/ml)</th>
<th>Group</th>
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<tr>
<td>Normal</td>
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<td>0</td>
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<tr>
<td>80–150</td>
<td>1/2</td>
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<td>150–200</td>
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<td>200–250</td>
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### Results of Oral Glucose Tolerance Tests

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<td>1/2</td>
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<td>190–250</td>
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Conclusions

1. There is no significant difference of fasting serum insulin levels among 3 groups. On oral glucose loading, the poorer the diabetic control, the lower insulin response. The P.C.D. group also shows a delayed insulin peak.

2. On oral loading of fructose, P.C.D. group shows definitely the higher glucose levels. All 3 groups show a slight increment of insulin levels. Though the difference of insulin levels between 3 groups is insignificant, the delayed insulin peak is also held true for P.C.D. group.

3. The restricted intake of sweety fruits seems indicated for P.C.D. group, while for W.C.D. group, the restriction might be more flexible.
Treatment of Diabetic Coma with Continuous Intravenous Infusion of Small-Dose Insulin: Experience of 14 Cases

Tong-Yuan Tai and Shih-Hsien Tsai
National Taiwan University Hospital

Based upon the encouraging results of many clinical investigators as well as our animal experiment in alloxan-diabetic rabbits, in the last 15 months, we have used the technique of continuous intravenous infusion of small-dose insulin and treated 8 cases of diabetic ketoacidosis. (Blood pH > 7.2, bicarbonate < 10 mEq/L and mean acetoacetic acid 13.9 mg%) and 6 cases of hyperglycemic hyperosmolar non-ketotic coma (Blood pH > 7.3, osmolarity > 350 mOsm/L and glucose > 500 mg%). The age distribution of ketoacidotic patients is 15-56, and that of non-ketotic coma patients is 38-72.

All of them were treated with initial intravenous loading of 10-20 units of regular insulin, followed by continuous intravenous infusion of 0.1 U/kg/hr of regular insulin. Except two of ketoacidotic patients and one of non-ketotic coma patients, the favorable responses were obtained in the remaining 11 cases. The cause of poor response of two patients is due to insulin resistance, reflected by the history of intermittent insulin injection, high insulin antibody titers and very low free serum insulin levels.

The poor response of another one patient is due to profound shock despite adequate serum insulin levels (35-116 uU/ml) throughout the course of treatment.

One ketoacidotic patient and two non-ketotic coma patients died (respectively mortality rate 12.5% and 33.3%). The former died of septic shock and the latters of delayed diagnosis (by the time of initial treatment, the patient were in deep coma).

In comparison with the results of the conventional treatment method of diabetic coma at this university hospital, it is worthwhile using this small-dose method for further observation.