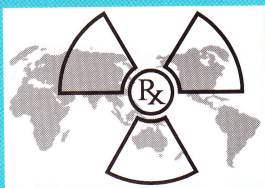
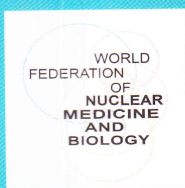
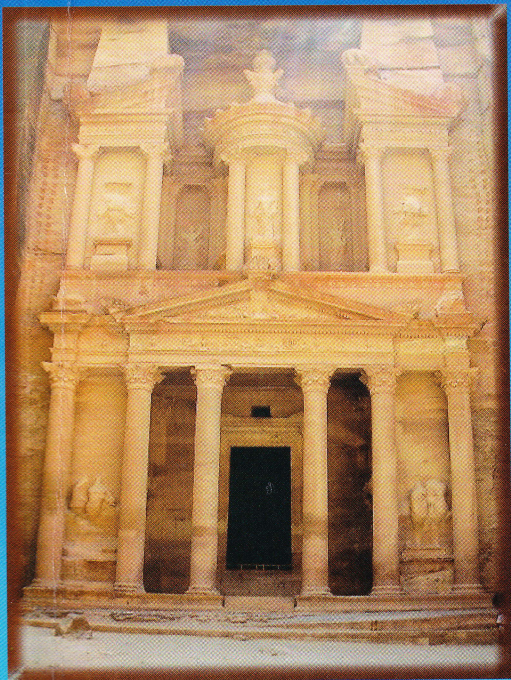


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Photograph on Front Cover:

Al Khazneh ("The Treasury") at Petra

Petra, often described as one of the greatest wonders ever wrought by Nature and Man. It is without doubt Jordan's most valuable treasure and greatest tourist attraction. It is a vast, unique city, carved into the sheer rock face by the Nabataeans, an industrious Arab people who settled here more than 2000 years ago, turning it into an important junction for the silk, spice and other trade routes that linked China, India and southern Arabia with Egypt, Syria, Greece and Rome. "Al Khazneh" or "The Treasury" monument in Petra is located at the end of a long passage through a crack in the rock. It is Petra's most elaborate ruin.

Photo credit: A.K. Padhy

Windows on WRPTC

RBC volume and category D. was considered to have depleted blood volume but normal RBC volume. Conclusion: The tracer dilution technique provides highly accurate results for blood volume and red cell volume analysis within only two hours and can be reliably applied to the differential diagnosis of polycythaemia vera.

037

Influence of antithyroglobulin antibodies on thyroglobulin concentration measured by immunoradiometric assay.

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Introduction: Serum Tg concentration is used as a tumour marker in the management of patients with differentiated thyroid carcinoma after surgery and ¹³¹I-iodine treatment. Thyroglobulin autoantibody (TgAb) interference with serum Tg measurements remains the most serious problem limiting the clinical value of Tg measurement. Because of that, results obtained by using different assays can be underestimated or overestimated. In this paper we wanted to explore the influence of TgAb on Tg concentration measured by an immunoradiometric assay (IRMA). **Materials and Methods:** We have used standard Tg concentrations (15, 50 and 200 ng/ml), THYRO, CIS biointernational, France, standard TgAb concentrations (0, 200, 1000 and 2000 IU/ml), TgAb I STEP, CIS biointernational, France and patient's sera with more than 200 IU/ml TgAb concentrations and lower than 1 ng/ml Tg. Patients' sera were obtained by centrifugation on 2000 rot/min during 15 min and kept on -20°C until use. Standard Tg concentrations were preincubated with standard TgAb concentrations or patient's sera (volume ratio 1:1) during 30 min. After that, Tg concentrations were measured. **Results:** Tg values measured in the presence of TgAb (standard TgAb solutions or Tg-specific autoantibody in patient's sera) were compared with Tg values measured without TgAb. It was shown that Tg concentrations measured in presence of 100, 500 and 1000 IU/ml TgAb were lower than Tg values measured without TgAb for all examined Tg concentrations, but this decrease was lower than 10%. In 10 of 11 patient's sera with TgAb (90.91%) measured Tg concentration was lower than the standard Tg sample preincubated with zero standard, and just in one tested sample (9.09%) measured Tg concentration was higher. We noticed that the increase of antibody concentration wasn't proportional with the decreasing of Tg concentrations, which indicated that specificity of TgAb in patient's sera might have influence on Tg measurements. **Conclusion:** Our results indicate that standard TgAb, as well as TgAb in patient's sera have influence on Tg concentration measured by IRMA assay. Further investigation is necessary to determine if this influence is significant.

038

Effects of furosemide and potassium chloride (KCL) addition to therapy on radioiodine retention in patients

with differentiated thyroid carcinoma (DTC) treated with I-131.

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When differentiated thyroid carcinoma is treated by ablation/therapeutic doses of ¹³¹I, it is not only important to achieve desired therapeutic effects, but to alleviate adverse radiation effects within the critical organs (bone marrow, gonads, salivary glands, kidneys and urinary bladder, etc.), too. Administration of diuretics as a part of standard procedure, intended both to increase and accelerate urinary excretion, with an aim to reduce adverse radiation effects, is advocated by many handbooks, guidelines and reputed authors. However, just a few researchers tried to explain the influence of diuretics on biokinetics and biodistribution of ¹³¹I in patients with differentiated thyroid carcinoma treated with this radionuclide. The objective of our research was to establish whether strong and cheap diuretic furosemide will influence urinary excretion and thyroid retention of ¹³¹I in patients with DTC, who received ablation/therapeutic doses of this radionuclide. Our research included 25 subjects (22 females and 3 males), with average age of 48.68±14.36 years, who had previously undergone total thyroidectomy due to histologically confirmed DTC. There were 24 patients with papillary and one with Hurtle cell carcinoma. All patients underwent ¹³¹I fixation test in the cervical region, as well as appropriate laboratory tests to determine their renal function. All patients were found to have preserved renal function and low percentage of ¹³¹I fixation in the rest of thyroid tissue, ranging from 0.2 % to 3.68 %. Twelve patients were treated with 3.7 GBq of ¹³¹I, nine of them with 5.55 GBq, and the remaining four with 1.85 GBq, 2.0, 3.95 and 6.7 GBq of ¹³¹I, respectively. Prior to application of ¹³¹I all patients had been subjected to low-iodine diet for a two weeks, as well as 4- to 6-week washout period during which they discontinued use of suppressive/substitutive L-thyroxin therapy, thus reaching TSH concentrations of over 35 mIU/L (35-120 mIU/L). In the course of the following three days, three hours after application of ¹³¹I, eleven patients were administered 20 mg of furosemide per os in eight-hour intervals. In order to avoid occurrence of hypokalemia, furosemide was accompanied by 250 mg doses of potassium chloride (KCl). Control group was composed of 14 patients who received neither furosemide nor KCl. Expositional doses in all subjects were measured with survey meter, immediately after ¹³¹I application and once more, 72 hours later. Based on these measurements, and having included corrections for ¹³¹I decay, the rest radioactivity was calculated as a fraction of administered dose (MBq of rest per GBq of applied activity of ¹³¹I). Seventy-two hours afterwards, a sample of venous blood was taken from all patients, and subsequently measured in a gamma counter. Recorded values were further compared to administered doses (imp/min/ml of blood per applied GBq). In subjects treated with furosemide+KCl, the rest radioactivity of ¹³¹I (124.71±72.63 MBq/GBq) was significantly higher (p=0.0056) than those in subjects from the control group