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TERRIER B., AOUBA A., DIOP S., CLERC J., VASILIU V., MUNERA Y., HERMINE O.

Thyroid gland plasmacytoma with a dramatic and persistent complete response under thalidomide and dexamethasone-associated treatment.

Leuk. Lymphoma, 47 (7), 1424-1426, 2006

(Services cités : Anatomo-Pathologie, Biophysique & Médecine Nucléaire, Hématologie Adulte)

2005

LE FEUVRE C., BARTHELEMY O., DUBOIS-LAFORGUE D., MAUNOURY C., MOGENET A., BAUBION N., METZGER J.P., TIMSIT J.

Stress myocardial scintigraphy and dobutamine echocardiography in the detection of coronary disease in asymptomatic patients with type 2 diabetes.

Diabetes Metab., 31 (2), 135-142, 2005

(Services cités : Biophysique & Médecine Nucléaire, Cardiologie Adulte)

Objective: The aims of this prospective study were: (1) to compare stress thallium-201 single photon emission computed tomography (SPECT) and dobutamine echocardiography (DE) in the detection of silent myocardial ischemia (SMI) in asymptomatic high risk diabetic patients; (2) to analyse long-term outcome after intensive care of SMI in these patients. Methods: SPECT was performed in 100 high risk diabetic patients and DE in the first 75 patients. Coronary angiography was realized in patients with SMI, with revascularization for suitable lesions. Intensive treatment of atherosclerosis risk factors was performed in all patients. Patients were followed 2 +/- 0.5 years for the subsequent occurrence of cardiac death, myocardial infarction and revascularization. Results: SMI was detected by SPECT in 62% and by DE in 10% of the patients ($p < 0.0001$), whereas significant coronary stenosis at angiography was detected by SPECT in 26% and by DE in 5% of the patients ($p < 0.02$). Independent predictive factors of significant coronary stenosis were male gender ($p < 0.03$) and peripheral arterial disease ($p < 0.007$). Nonfatal acute coronary syndrome occurred during follow-up in 2 patients (2%).

Subsequent revascularization procedure was needed in 9 patients. Baseline patients' characteristics, as well as SMI, were not predictive of cardiac event during follow up. Conclusion: SPECT seems more accurate than DE to detect significant coronary stenosis in high risk asymptomatic diabetic patients. In this population, aggressive treatment of SMI with systematic revascularization combined with intensive care of risk factors is associated with a favorable long-term prognosis, similar in diabetic patients with and without initial SMI.

LEGER A.F., PELLAN M., DAGOUSSET F., CHEVALIER A., KELLER I., CLERC J.

A case of stunning of lung and bone metastases of papillary thyroid cancer after a therapeutic dose (3.7 GBq) of ¹³¹I and review of the literature: implications for sequential treatments.

Brit. J. Radiol., 78 (929), 428-432, 2005

(Services cités : Biophysique & Médecine Nucléaire)

Thyroid stunning is usually defined as the inhibition or suppression of iodide trapping by remnant thyroid tissue or by functioning metastases following a diagnostic dose of (¹³¹)I. The risk of stunning increases progressively with larger doses. Because the threshold above which this effect occurs in thyroid remnants seems to be between 37 MBq and 111 MBq of (¹³¹)I, therapeutic

(131)I doses of 3.7 GBq may cause stunning. We describe stunning of papillary thyroid cancer lung and bone metastases after a therapeutic dose of (131)I (3.7 GBq). A T1 bone metastasis and bilateral lung metastases were diagnosed by post-therapeutic dose whole-body scan. Nuclear MRI detected another lesion at T4, whose (131)I fixation was not obvious. An additional 0.7 GBq were given after recombinant TSH, 37 days after the therapeutic dose; 24 h later, uptake by the lung and T1 metastases had disappeared, but trapping was again seen 6 months later on the post-therapeutic scan. This re-appearance is evidence in favour of the transitory and reversible character of stunning, and confirms its correspondence to the decreased ability of viable thyroid cells to trap iodine and not to their destruction. A better understanding of stunning would make it possible, in the event of rapidly progressing disease and in conjunction with recombinant thyroid stimulating hormone (TSH), to give several therapeutic doses of (131)I in close succession without each dose hampering the effectiveness of the subsequent one.

2003

ACAR P., MAUNOURY C., de MONTALEMBERT M., DULAC Y.

Abnormalities of myocardial perfusion in sickle cell disease in childhood: A study of myocardial scintigraphy.

Arch. Mal. Coeur Vaisseaux, 96 (5), 507-510, 2003

(Services cités : Département de Pédiatrie, Biophysique & Médecine Nucléaire)

Ischaemic complications are common in SS homozygotic sickle cell disease in children, but the heart does not appear to be the target organ. The early detection of myocardial ischaemia in these children could prevent cardiac complications. The authors undertook a study of myocardial perfusion by myocardial scintigraphy in children with sickle cell disease. Twenty-three patients (average age 12.5 years) underwent Thallium 201 myocardial scintigraphy. Exercise on a bicycle ergometer and/or intravenous injection of dipyridamole were carried out depending on the age. The images (on exercise and late recovery period) were analysed in the 3 standard projections of the left ventricle: short axis, long axis and 4-chamber view. The left ventricular ejection fraction was measured by gamma angiography. Myocardial perfusion was abnormal in 14 patients (61%). The perfusion defects were reversible in the late recovery period in 9 patients and irreversible in 5 patients. The average left ventricular ejection fraction was 63.9%. Its value was not related to symptoms, haemoglobin level or the results of myocardial scintigraphy. Four patients with perfusion defects were symptomatic (cardiac failure, angina or ventricular tachycardia); 1 patient died and 3 were treated with hydroxyurea. Myocardial scintigraphy was carried out 6 months later and showed improved perfusion in 3 patients. Abnormalities of myocardial perfusion are therefore common in sickle cell disease. Often asymptomatic in childhood, there is a real risk of ischaemic cardiomyopathy and its complications in adulthood. Specific treatment of sickle cell disease with hydroxyurea should be considered in cases with significant abnormalities of myocardial perfusion.

LORIN-de-LA-GRANDMAISON G., IZEMBART M., FORNES P., PARAIRE F.

Myocarditis associated with Hashimoto's disease: a case report.

Int. J. Legal. Med., 117 (6), 361-364, 2003

(Services cités : Biophysique & Médecine Nucléaire)

We report on a sudden cardiac death case involving a 40-year-old man with no known medical history. Forensic autopsy showed lymphocytic myocarditis associated with lymphocytic thyroiditis. In both the heart and the thyroid gland, the inflammatory foci often had a nodular pattern with a germinal centre. Virological and toxicological analyses were negative. Postmortem

biochemistry showed a slight increase in TSH in combination with normal T3 and T4 blood levels suggesting hypothyroidism. High titres of antiperoxidase and antithyroglobulin antibodies with normal levels of TSH receptor antibodies, in addition to biological hypothyroidism and lymphocytic inflammation were consistent with the diagnosis of Hashimoto's thyroiditis. Immunohistochemical studies excluded a lymphoma and showed no evidence of viral myocarditis. In contrast to Grave's disease, Hashimoto's thyroiditis has never been reported in association with myocarditis as a cause of sudden death. We conclude that the cardiac immunological and histological pattern, similar to that found in the thyroid gland suggests an autoimmune myocarditis.

MAUNOURY C., ACAR P., de MONTALEMBERT M., SIDI D.

Myocardial perfusion in children with sickle cell disease.

Amer. J. Cardiol., 91 (3), 374-376, 2003

(Services cités : Centre d'Hémodiologie François JOSSO, Cardiologie Pédiatrique, Biophysique & Médecine Nucléaire)

MAUNOURY C., ACAR P., SIDI D.

Use of (123)I-MIBG scintigraphy to assess the impact of carvedilol on cardiac adrenergic neuronal function in childhood dilated cardiomyopathy.

Eur. J. Nucl. Med. Mol. Imag., 30 (12), 1651-1656, 2003

(Services cités : Cardiologie Pédiatrique, Biophysique & Médecine Nucléaire)

Iodine-123 metaiodobenzylguanidine (MIBG) cardiac scintigraphy is a useful tool for the assessment of cardiac adrenergic neuronal function, which is impaired in children with idiopathic dilated cardiomyopathy (DCM). In adults with DCM, long-term treatment with carvedilol improves both cardiac adrenergic neuronal function and left ventricular function. The aim of this prospective study was to evaluate the impact of carvedilol on cardiac adrenergic neuronal function using (123)I-MIBG scintigraphy and on left ventricular function using equilibrium radionuclide angiography in children with DCM. Seventeen patients (11 female, six male; mean age 39+/-57 months, range 1-168 months) with DCM and left ventricular dysfunction underwent (123)I-MIBG cardiac scintigraphy and equilibrium radionuclide angiography before and after a 6-month period of carvedilol therapy. A static anterior view of the chest was acquired 4 h after intravenous injection of 20-75 MBq of (123)I-MIBG. Cardiac neuronal uptake of (123)I-MIBG was measured using the heart to mediastinum count ratio (HMR). Radionuclide left ventricular ejection fraction (LVEF) was assessed following a standard protocol. MIBG cardiac uptake and left ventricular function respectively increased by 38% and 65% after 6 months of treatment with carvedilol (HMR=223%+/-49% vs 162%+/-26%, P<0.0001, and LVEF=43%+/-17% vs 26%+/-11%, P<0.0001). Carvedilol can improve cardiac adrenergic neuronal and left ventricular function in children with dilated cardiomyopathy. Further studies are needed to assess the relationship between improvement in MIBG cardiac uptake and the beneficial effects of carvedilol on morbidity and mortality.

2001

ACAR P., MAUNOURY C., BONNET D., SEBAHOUN S., BONHOEFFER P., SALIBA Z., SIDI D., KACHANER J.

Comparison of myocardial perfusion single-photon emission computed tomography with coronary artery angiography after arterial switch operation.

Amer. J. Cardiol., 87 (12), 1425-1427, 2001

(Services cités : Biophysique & Médecine Nucléaire, Cardiologie Pédiatrique)

ACAR P., MAUNOURY C., BONNET D., SEBAHOUN S., BONHOEFFER P., HALLAJ I., AGGOUN Y., ISERIN F., SIDI D., KACHANER J.

Myocardial spect late after the arterial switch operation.

Arch. Mal. Coeur Vaisseaux, 94 (5), 452-456, 2001

(Services cités : Biophysique & Médecine Nucléaire, Cardiologie Pédiatrique)

Coronary artery obstruction is the main late complication of the so-called arterial switch operation designed to repair transpositions of the great arteries in newborn infants by switching the great vessels and transferring the coronary ostia onto the posterior vessel. Our aim was to study the links between myocardial perfusion and coronary artery anatomy after the arterial switch operation. Forty-five patients (5.863 years) underwent a 201TI myocardial SPECT and a selective coronary artery angiography. The latter was normal in 20 children: 13 had also a normal myocardial scan but 7 had myocardial perfusion defects including 2 with angina who had a very low coronary reserve at positron emission tomography. Twenty-five patients had severe coronary artery lesions: 5 with a normal myocardial scan and 20 with perfusion defects. Twelve out of these 20 underwent surgical revascularization and the SPECT images went back to normal in all within 6 months after surgery. Specificity and sensitivity of myocardial SPECT in detecting coronary artery lesions were 78% and 69% whereas positive and negative predictive values were 74 and 73%. We conclude that myocardial SPECT imaging is not the right way to detect late post arterial switch coronary artery lesions. It is helpful in decision making as to submit these children to surgical revascularization and in assessing its postoperative effectiveness. [References: 20]

CLERC J., KAHN E., FRAGU P.

Sims evidence that carbimazole enhances spatial heterogeneity of thyroid iodine storage and targeting in a woman with graves' disease.

Cell. Mol. Biol., 47 (3), 519-527, 2001

(Services cités : Biophysique & Médecine Nucléaire)

Antithyroid drugs (ATD) are known to reduce I-131 efficacy in thyrotoxicosis, though the underlying mechanism remains misunderstood. To study the impact of long term administration of carbimazole on both iodine stores (I-127, secondary ion mass spectrometry microscopy) and targeting (I-125, radioautography) at the intraglandular level in a woman who underwent surgery for Graves' disease. I-125 distribution was dramatically heterogenous and large areas of the sample appeared poorly or no stained at all. This may correspond to flat follicles. hypofunctioning or ATD blocked ones and to the various histological changes related to the thyroiditis. SIMS counting showed huge variations of the interfollicular iodine stores (0 to 1.18 mug/mg) and lower mean values than those observed in nodular goiters. SIMS imaging depicted iodine free areas and others with preserved thyroglobulin synthesis, as assessed via S-32(-) mapping, but low to undetectable I-127, suggesting focal organification defects. Since ATD reduce iodine storage and uptake capabilities and enhance the iodine heterogeneity of interfollicular targeting, a related enhancement of the spatial I-131 dose distribution is unavoidable. ATD may reduce I-131 efficacy by variably reducing the number of follicles which can be actually or significantly targeted, e.g. irradiated (antirecruitment effect). [References: 24]

MAUNOURY C., ANTONIETTI T., SEBAHOUN S., BARRITAU L.

Assessment of left ventricular function by tl-201 spect using left ventricular cavity-to-myocardium count ratio.

Nucl. Med. Commun., 22 (3), 281-285, 2001

(Services cités : Biophysique & Médecine Nucléaire)

Equilibrium radionuclide angiography (ERNA) is the 'gold standard' for assessing left ventricular ejection fraction (LVEF). The aim of the study was to determine whether the left ventricular cavity-to-myocardium count ratio (LVCMR) from Tl-201 myocardial single photon emission computed tomography (SPECT) correlated with LVEF assessed by ERNA. The study group included 159 consecutive patients (117 male, 12 female), aged 59 +/- 12 years, who underwent both Tl-201 SPECT and ERNA at rest on the same day. The LVCMR was calculated from a mid-ventricular short axis slice on redistribution studies, using two regions of interest (ROIs). One ROI was placed in the centre of the left ventricular cavity (C) and the other was placed in the myocardium with maximum uptake (M-max): $LVCMR = (C/M-max) \times 100$. The correlation between LVCMR and LVEF was $r = 0.85$ ($y = 0.943x + 5.002$; $P < 0.0001$). The mean calculated values +/- 1 SD were $LVCMR = 54 \pm 16\%$ and $LVEF = 52 \pm 15\%$. In conclusion, LVCMR from Tl-201 SPECT studies was closely correlated with LVEF from ERNA studies and can be used to easily and rapidly estimate left ventricular function. ((C) 2001 Lippincott Williams & Wilkins). [References: 13]

MAUNOURY C., SEBAHOUN S., LE FEUVRE C., ANTONIETTI T., BARRITAU L.

Value of linsidomin in assessing myocardial viability with thallium-201 spect.

Nucl. Med. Commun., 22 (12), 1313-1316, 2001

(Services cités : Biophysique & Médecine Nucléaire)

Myocardial viability can be assessed with rest/24 h redistribution Tl-201 myocardial single photon emission computed tomography (SPECT). The intravenous injection of vasodilators induces an early redistribution of Tl-201 and shortens the total examination time. The aim of this study was to compare the images after injection of linsidomin with the 24 h images. We studied 51 consecutive patients (38 males, 13 females), aged 66 +/- 11 years, referred for assessment of myocardial viability after acute myocardial infarction, SPECT acquisition at rest (30 projections over 180 degrees, 30 s per projection) was performed 20 min after injection of Tl-201. A second acquisition (same parameters) was performed 2 min after intravenous injection of linsidomin (2 mg). A delayed acquisition was performed on the following day (50 s per step). Myocardial perfusion at rest was normal in 111 of 255 segments. For the 144 other segments, 24 h images were similar to the images acquired after the injection of linsidomin in 94% of cases (136 of 144 segments). The 24 h images showed partial redistribution that was not present after linsidomin in only eight segments (6%). Injection of linsidomin after rest acquisition can provide a reliable and more rapid assessment of myocardial viability. This very simple protocol (rest/linsidomin Tl-201 myocardial SPECT) can be performed in less than 1 h. ((C) 2001 Lippincott Williams & Wilkins). [References: 18]

2000

ACAR P., SEBAHOUN S., de PONTUAL L., MAUNOURY C.

Myocardial perfusion in children with sickle cell anaemia.

Pediat. Radiol., 30 (5), 352-354, 2000

(Services cités : Cardiologie Pédiatrique, Biophysique & Médecine Nucléaire)

Background. Myocardial ischaemia is an unexpected complication with potentially serious clinical damages in patients with sickle cell anaemia (SCA). Conventional techniques, such as exercise testing and echocardiography, have low sensitivity and specificity for the detection of myocardial ischaemia in patients with SCA. Objective. To assess myocardial perfusion using

thallium-201 ((201)Tl) single-photon emission computed tomography (SPECT) in children with SCA. Materials and methods. Eight patients (11.5 +/- 5.0 years, mean +/- SD) who were free of cardiac symptoms were studied. Myocardial perfusion was assessed by (201)Tl-SPECT after stress and 3 h later after a further injection. Left ventricular ejection fraction (LVEF) was assessed by equilibrium radionuclide angiography. Results. Myocardial perfusion was abnormal in three of eight patients: two had reversible defects and one had a fixed defect. The mean LVEF was 53 +/- 8 %. There was no relationship between myocardial perfusion and LVEF Conclusions. Treatment of asymptomatic myocardial ischaemia remains unclear, and more aggressive therapy of the haematological disease should be considered. [References: 6]

LEGER A.F., BAILLET G., DAGOUSSET F., VINCENOT M.I., IZEMBART M., CLERC J., BARRITAU L.

Upper retropharyngeal node involvement in differentiated thyroid carcinoma demonstrated by I-131 scintigraphy.

Brit. J. Radiol., 73 (876), 1260-1264, 2000

(Services cités : Biophysique & Médecine Nucléaire)

We report four patients with papillary thyroid cancer who had upper retropharyngeal node involvement demonstrated by I-131 scintigraphy. Three patients presented with a thyroid nodule and enlarged jugular nodes. Total thyroidectomy was performed with node dissection. Pathology demonstrated papillary carcinoma with several metastatic nodes. I-131 scanning 4 weeks after surgery demonstrated increased uptake in an upper retropharyngeal node. In one patient, thyroidectomy had been performed 21 years previously. Increased thyroglobulin level led to I-131 scanning, which showed focal retropharyngeal uptake. All four patients had asymmetrical uptake at mouth level with focal uptake close to the sagittal plane. A lateral projection showed focal uptake between the base of the skull and the mandibular angle, behind the region of the mouth and nose. CT in all cases and MRI in one case confirmed the presence of an enlarged node. The mass was removed surgically in two patients and pathology confirmed the papillary nature of the metastatic node. Two patients were treated by I-131. Focal uptake of I-131 in the region of the mouth is ambiguous, since salivary uptake of I-131 is a common finding on scintigraphy. In cases of asymmetrical uptake in the region of the mouth, a lateral projection of the head therefore allows the correct diagnosis. [References: 27]

MAUNOURY C., AGOSTINI D., ACAR P., ANTONIETTI T., SIDI D., BOUVARD G., KACHANER J., BARRITAU L.

Impairment of cardiac neuronal function in childhood dilated cardiomyopathy: an I-123-mibg scintigraphic study.

J. Nucl. Med., 41 (3), 400-404, 2000

(Services cités : Biophysique & Médecine Nucléaire)

Abnormalities of norepinephrine uptake have been found to reflect impairment of cardiac adrenergic neuronal function in adults with heart failure. To our knowledge, no data on childhood dilated cardiomyopathy (DCM) are available. The aim of this study was to assess the cardiac neuronal function using I-123-metaiodobenzylguanidine (MIBG) scintigraphy in children with idiopathic DCM. Methods: We studied 26 patients (mean age, 44 +/- 50 mo) with DCM and left ventricular dysfunction and 12 control subjects (mean age, 49 +/- 65 mo) with normal left ventricular function. All subjects underwent planar cardiac imaging after intravenous injection of 20-75 MBq I-123-MIBG. A static anterior view was acquired 4 h after injection. The heart-to-mediastinum count ratio was measured as described previously. Results: On the basis of a

reduction of the heart-to-mediastinum count ratio, cardiac neuronal uptake of I-123-MIBG was significantly decreased in patients with DCM compared with cardiac uptake in control subjects (172% +/- 34% versus 277% +/- 14%; $P < 0.0001$). A significant correlation was found between left ventricular ejection fraction and I-123-MIBG cardiac uptake in patients with DCM ($y = 2.5x + 113.3$; $r = 0.80$; $P < 0.0001$). Conclusion: Cardiac adrenergic neuronal function is impaired in children with idiopathic DCM. I-123-MIBG cardiac scintigraphy is a useful tool to assess cardiac neuronal function in childhood DCM. [References: 35]

OLAIZOLA I., ZINGRAFF J., HEUGUEROT C., FAJARDO L., LEGER A., LOPEZ J., ACUNA G., PETRAGLIA A., ALVAREZ A., CAORSI H., DRUEKE T., AMBROSONI P. Tc-99m-sestamibi parathyroid scintigraphy in chronic haemodialysis patients: static and dynamic explorations.

Nephrol. Dialysis Transplant., 15 (8), 1201-1206, 2000

(Services cités : U507, Biophysique & Médecine Nucléaire)

Background. The place of parathyroid gland imaging by [Tc-99m](technetium)-sestamibi scintigraphy in uraemic patients with secondary hyperparathyroidism remains a matter of debate. The purpose of the present study was (i) to assess its value with respect to plasma intact parathyroid hormone (iPTH) levels and to surgical parathyroidectomy (PTx), and (ii) to explore the possibility of suppressing parathyroid [Tc-99m]-sestamibi uptake by calcitriol. Methods. In a first cross-sectional, static study 52 chronic haemodialysis (HD) patients with plasma iPTH levels between 14 and 2791 pg/ml (normal, 10-65 pg/ml) had a [Tc-99m]-sestamibi scan, and 21 of them underwent surgical PTx. In a second longitudinal, dynamic study 14 chronic HD patients with advanced secondary hyperparathyroidism received short-term calcitriol treatment in an attempt to suppress [Tc-99m]sestamibi imaging of parathyroid glands. Calcitriol was given intravenously for 2 weeks, 2 μ g after each haemodialysis session. Scintigraphy was carried out before and at the end of this inhibition test. Results. [Tc-99m]-Sestamibi scan led to imaging of one or more (maximum three) parathyroid glands in most, but not all, HD patients with plasma iPTH values >600 pg/ml. Based on surgical findings, overall sensitivity of [Tc-99m]-sestamibi scan in correctly locating parathyroid glands was only 50%, whereas specificity was 100%. In contrast, its sensitivity was 100% in locating single glands in the subgroup of five patients with recurrent hyperparathyroidism. The calcitriol inhibition test showed suppression of [Tc-99m]-sestamibi uptake by at least one parathyroid gland in eight patients (57%), with complete suppression in five of them (36%). Basal plasma iPTH or decrease of plasma iPTH in response to calcitriol was not predictive of suppressible [Tc-99m]-sestamibi uptake in the individual case, although mean iPTH was markedly higher in patients with non-suppressible parathyroid glands. Conclusion. Because of its relatively low sensitivity the [Tc-99m]-sestamibi scan is of limited help in the exploration of uraemic patients with severe secondary hyperparathyroidism before a first surgical PTx. However, it is very useful in locating the remaining parathyroid gland(s) in case of reoperation. The novel calcitriol inhibition test of [Tc-99m]-sestamibi uptake could help to better distinguish parathyroid glands with nonsuppressible, autonomous activity from glands whose activity might be amenable to long-term suppression. [References: 21]

1999

CLERC J.

Cancer thyroïdien différencié : aspect normal et variantes de l'imagerie thoracique.

Méd. Thérap. Endocrinol., 1 (2), 180-181, 1999

(Services cités : Biophysique & Médecine Nucléaire)

ESTIENNE V., DUTHOIT C., DI COSTANZO V., LEJEUNE P.J., ROTONDI M., KORNFELD S., FINKE R., LAZARUS J.H., FELDT RASMUSSEN U., FRANKE W.G., SMYTH P., D'HERBOMEZ M., CONTE DEVOLX B., PERSANI L., CARELLA C., JOURDAIN J.R., IZEMBART M., TOUBERT M.E., PINCHERA A., WEETMAN A., SAPIN R., CARAYON P., RUF J.

Multicenter study on tgpo autoantibody prevalence in various thyroid and non-thyroid diseases; relationships with thyroglobulin and thyroperoxidase autoantibody parameters.

Eur. J. Endocrinol., 141 (6), 563-569, 1999

(Services cités : Biophysique & Médecine Nucléaire)

Objective: TGPO autoantibodies (aAbs) that bind simultaneously to thyroglobulin (Tg) and thyroperoxidase (TPO) are present in the serum of patients with autoimmune thyroid diseases (AITD) and have been found to differ from monospecific Tg and TPO aAbs. To obtain further insights on the prevalence defined as the rate of occurrence and significance of TGPO aAbs in a large population, we carried out a collaborative study involving 15 European teams. Methods: Serum samples from 3122 patients with various thyroid and non-thyroid diseases and normal subjects were assayed using a novel TGPO aAb detection kit. This test was designed so that TGPO aAbs are trapped between the Tg-coated solid phase and the soluble TPO labeled with a radioiodinated monoclonal antibody. Results: Only three out of the 220 normal subjects (prevalence of 1.4%) were found to have positive TGPO aAb levels, which were mainly observed in the patients with AITD: the group of patients suffering from Hashimoto's thyroiditis had a TGPO aAb prevalence of 40.5% (n = 437 patients), those with Graves' disease, a prevalence of 34.6% (n = 645) and those with post-partum thyroiditis, 16.0% (n = 243). Among the non-AITD patients with positive TGPO aAb levels, the TGPO aAb prevalence ranged from 20.7% among those with thyroid cancer (n = 240) to 0% among those with toxic thyroid nodules (n = 47). Among the patients with non-thyroid diseases, the TGPO aAb prevalence ranged from 9.8% in the case of Biermers pernicious anemia (n = 78) to 0% in that of premature ovarian failure (n = 44). It is worth noting that the groups showing the highest TGPO aAb prevalence also contained the patients with the highest TGPO aAb titers. Statistical comparisons between the TGPO aAb prevalences in the various groups showed that TGPO aAb could be used as a parameter to distinguish between the groups of Hashimoto's and Graves' patients and between the women with post-partum thyroiditis and the post-partum women with only Tg and/or TPO aAb established during early pregnancy. Unexpectedly, the correlations between TGPO aAbs and Tg and TPO aAbs were found to depend mainly on the assay kit used. Conclusion: High TGPO aAb titers are consistently associated with AITD but the reverse was not found to be true. TGPO aAbs are a potentially useful tool, however, for establishing Hashimoto's diagnosis, and would be worth testing in this respect with a view to using them for routine AITD investigations. [References: 11]