

Amiodarone - induced type 2 thyrotoxicosis in patient with ESRD treated with hemodialysis

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Introduction. Type 2 amiodarone-induced thyrotoxicosis [AIT2], resulting from the release of thyroid hormones, is a rarer form of side effect of this drug. Treatment of thyrotoxicosis in patients with end stage renal disease [ESRD] is difficult because hemodialysis alters renal clearance of drugs and iodine, may impact the results of assessment and treatment and can increase the medical instability of patients.

The aim was to present the difficulties of AIT2 treatment in a patient with ERDS.

Case report. 47-year-old man treated with hemodialysis four times a week for 3.5 years. Because of recurrent episodes of atrial flutter and fibrillation amiodarone was applied by 1.5 months. Due to arrhythmias recurrence, evaluation of thyroid function was performed and thyrotoxicosis was recognized. Amiodarone was withdrawn and thiamazole and prednisone have been applied. After slight improvement, the concentrations of thyroid hormones significantly raised with TRAb-0.4U/L [n<1.5], a/TPO-86U/I [n<60], a/TG-89U/I [n<60]. In ultrasound thyroid goiter [47ml] with heterogeneous structure and reduced vascularization was detected. The lack of 99mTc uptake in scintigraphy was found. The patient received thiamazole, prednisolone and lithium carbonicum again together with sodium perchlorate [tab.1]. After another short-term of an improvement, deterioration of the disease appeared [FT4-60.8pmol/l [n<22], FT3-39.2pmol/l [n<7], TSH<0.04mIU/l] [tab.1]. The results of imaging studies justified AIT2 recognition. Antithyroid drugs and sodium perchlorate were withdrawn. High dose of prednisolone was continued. In order to accelerate the elimination of the free thyroid hormones three cycles of plasmapheresis were conducted [tab.3]. Normalization of hormones was reached after five months of onset of the disease.

Conclusions.

1. Similarly as in the case of patients without renal failure, only prednisone is effective in treatment of AIT2 in ESRD.
2. Hemodialysis is ineffective and plasmapheresis is slightly effective in the elimination of free thyroid hormones.
3. Monitoring of thyrotoxicosis and assessment of the effects of treatment in patients with ESRD are difficult.

Tab. 1 The AIT treatment with Methylprednisolone in our patient.

date	9.09.2015	29.09. 2015	20.10.2015	16.11. 2015
treatment	thiamazol , lithium carbonicum, sodium perchlorate, Methyl- prednisolon	Methyl- prednisolone 32 mg/day	Methyl- prednisolone 16 mg/day	Methyl- prednisolone 8 mg/day
FT3 3.1-6.8 pmol/l	24.5	39.2	12.11	6.26
FT4 12.0-22.0 pmol/l	53.4	60.8	38.78	16.57

Tab.2 Changes in thyroid free hormones concentrations before and after dialysis

	Before dialysis	After dialysis
FT3 normal range 2.3 - 4.2 pg/ml	9.8	13.4
FT4 normal range 0.89-1.76 ng/ml	2.84	4.0

Tab.3. The elimination of free thyroid hormones after plasmapheresis

	Before plasma- pheresis	After I plasma- pheresis	After II plasma- pheresis	After III Plasma- pheresis
FT3 normal range 2.3 - 4.2 pg/ml	10.2	8.0	6.3	6.7
FT4 normal range 0.89-1.76 ng/ml	2.65	2.52	2.51	2.13

