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57th ERA-EDTA Congress Abstracts

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INVITATION

Dear Colleagues,

Our 57th ERA-EDTA Congress will continue as planned on the originally scheduled dates of June 6-9, 2020 in a fully virtual manner.

As every year, it will be the time to celebrate goals and achievements as well as explore new paths and be fascinated by innovations and developments which influence the world of nephrology in a fully virtual, but still highly interactive, manner.

The Scientific Committee, chaired by Prof. Peter J. Blankestijn, has worked very hard to guarantee an outstanding scientific programme that could meet the expectations of virtual attendees and satisfy the nephrology community.

We are looking forward to sharing with all of you the experience of this extraordinary and unique virtual edition of the 2020 ERA-EDTA Congress.

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METHOD FOR AN EFFECTIVE INTRAOPERATIVE IDENTIFICATION OF PARATHYROID GLANDS IN HEMODIALYSIS PATIENTS WITH SEVERE HYPERPARATHYROIDISM FOR ADEQUATE PARATHYROIDECTOMY

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Background and Aims: Secondary and tertiary hyperparathyroidism (HPT) in patients undergoing chronic hemodialysis is one of the most important problems of clinical nephrology.

The removal of altered parathyroid glands has a number of difficulties: the detection and

accurate allocation of the entire volume of the parathyroid glands due to their small size, similar structure to the surrounding tissues (thyroid gland, lymph nodes and adipose tissue) and complex anatomical location.

Usually parathyroid glands are located directly on the posterior surface of the thyroid lobes, but in some cases they can be located atypically. In addition, the parathyroid glands are often "immersed" in the tissue of the thyroid gland, which also makes their visualization difficult.

Isolation and differentiated intraoperative visualization of the parathyroid glands is extremely important for an adequate amount of surgical intervention.

Method: Seven dialysis patients with severe hyperparathyroidism were operated on using oral administration of 5-aminolevolenic acid for intraoperative imaging of the parathyroid glands. Secondary and tertiary hyperparathyroidism ware diagnosed in patients with C5D stage CKD by a significant increase in the level of intact parathyroid hormone (iPTH) and increased parathyroid glands detected by ultrasound. In all patients, the level of iPTH before surgery was more than 1500 pg / ml. At the prehospital stage, in all patients, according to the results of ultrasound, enlarged parathyroid glands were revealed (the number of parathyroid glands in one patient was 4 +/- 2). For intraoperative identification of changed parathyroid glands in these patients, the oral administration of a solution of 5-aminolevulinic acid was used (given in 180 minutes before the start of surgery at a dose of 10 -15 mg / kg body weight). Then the surgical field was irradiated with polarized blue light with a wavelength of 395–405 nm to record fluorescence. If fluorescent formations were detected in the area of irradiated tissues, they were removed with subsequent reimplantation of a less altered part of the hyperplastic parathyroid gland into the forearm region.

Results: Specific bright red fluorescence and luminescence of the parathyroid glands caused by special external sources of polarizing blue light during the operation were observed in all 7 patients. In each patient from 3 to 6 light portions of parathyroid glands were detected.

These lightning portions were isolated, removed, and in 3 patients the most unchanged areas of the parathyroid glands were autotransplanted into the forearm. In the postoperative period, all patients showed the decrease in the level of iPTH less than 300 pg/ml, a syndrome of "hungry" bone, which was corrected by the administration of calcium and vitamin D preparations. Histologically all the found tissues were characterized as tissue of the parathyroid glands. The duration of operations was 48 +/- 12 minutes.

Patients did not have any side effects indicated in the annotation to the drug.

Conclusion: Intraoperative fluorescence diagnostics of the parathyroid glands with preoperative oral use of 5-aminolevolenic acid is a simple and effective method of their visualization.

This method promotes adequate parathyroidectomy and allows to reduce the time of surgical intervention in hemodialysis patients.