

OP240**Incidence of hyperkalemia in patients undergoing Radiopeptide therapy does not depend on the amount of co-infused amino acid infusion**

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Aim: Radiopeptide therapy is routinely used for advanced neuroendocrine tumors (NET). In order to reduce radiation exposure and to prevent nephrotoxicity, amino acids (L-lysine and L-arginine) are co-infused to inhibit tubular reabsorption of the radiopeptide. However, amino acid infusion induced hyperkalemia has been described as a potentially life threatening side effect (1). The aim of the study was to investigate whether the amount of amino acids infused relates to the incidence of hyperkalemia. **Materials and Methods:** From September 2013 - April 2014, 22 patients (14 male, 8 female, age 58 ± 14 y, range: 24-82 y) undergoing PRRT were enrolled during two consecutive treatment cycles. In all subjects, biochemical standard values were obtained prior to, 4h and 24h after therapy. For kidney protection, physiological saline containing arginine and lysine hydrochloride was infused: During the first treatment cycle 75g AA-solution was administered (group 1), whereas 50g were given in the second cycle according to practical guidance (group 2) (2). Wilcoxon test and two-sided Student's t-test were used to compare mean blood values (potassium, GFR, creatinine, BUN, sodium, phosphate, chloride, LDH) of both protection protocols. A $p \leq 0.05$ was considered to be significant. **Results:** Hyperkalemia occurred in 20/22 patients in group 1 (range: 4.5-7.1 mmol/l). In group 2 20 patients suffered from increased potassium levels (range: 4.6-7.9 mmol/l). Comparing both protocols, serum K⁺ levels prior to, 4h after and 24h after therapy did not show significant difference between 75g vs. 50g AA (baseline K⁺: 4.40 ± 0.40 mmol/l vs. 4.34 ± 0.42 mmol/l; 4h: 5.83 ± 0.72 mmol/l vs. 5.70 ± 0.75 mmol/l; 24h: 4.46 ± 0.43 mmol/l vs. 4.58 ± 0.42 mmol/l; $p > 0.05$). BUN, phosphate, chloride and LDH showed no significant differences ($p > 0.05$). Only for GFR levels ($p = 0.011$), creatinine levels ($p = 0.016$) and sodium levels ($p = 0.031$) a significant difference was found. **Conclusion:** This study demonstrates that the incidence of hyperkalemia does not depend on the amount of amino acid pretherapeutically infused (75g vs. 50g AA protection protocol). **References:** (1) Giovacchini G, Nicolas G, Freidank H, et al. Effect of amino acid infusion on potassium serum levels in neuroendocrine tumour patients treated with targeted radiopeptide therapy. *Eur J Nucl Med Mol Imaging*. 2011;38:1675-1682 (2) Bodei L, Mueller-Brand J, Baum RP, et al. The joint IAEA, EANM, and SNMMI practical guidance on peptide receptor radionuclide therapy (PRRT) in neuroendocrine tumours. *Eur J Nucl Med Mol Imaging*. 2013;40:800-816