

Geriatric testing

P1253

ASSOCIATION OF RENAL FUNCTION WITH ANTI-TPO ACTIVITY IN NEWLY DIAGNOSED CASES OF ELDERLY HYPOTHYROIDISM

G.K. Saharia¹, G. Devi¹, K. Behera¹, M. Mangaraj¹

¹All India Institute of Medical Sciences (AIIMS) Bhubaneswar

BACKGROUND-AIM

Background: The thyroid hormone, beyond its metabolic role, contributes to the development and functioning of the kidney, influencing hemodynamic changes and the glomerular filtration rate (GFR). While there is evidence of Thyroglobulin antibody affecting renal function, leading to conditions like glomerulonephritis and nephrotic syndrome, data on the impact of Anti Thyroid peroxidase antibody (Anti-TPO) on renal function is limited. The incidence of thyroid nodules and thyroid tumours also increases with age. While previous studies have shown a correlation between estimated GFR (eGFR) and TSH, T3, and T4 in the elderly population, our extensive literature search revealed no studies correlating the eGFR with the anti-thyroid antibodies of elderly hypothyroid patients.

Objective: To evaluate renal function in newly diagnosed elderly hypothyroid patients and to explore the correlation of eGFR between Anti TPO positive and negative elderly hypothyroid patients.

METHODS

Methods: We conducted a cross-sectional study with 128 participants aged 60 years and above. The participants were recruited from the Endocrinology outdoor clinic of our hospital and Serum thyroid profile and renal markers were evaluated on autoanalyzer in the Biochemistry laboratory, and statistical analyses were performed.

RESULTS

Results: Median age of the hypothyroid individuals is 67 years. Hypothyroid patients exhibited elevated anti-TPO levels (92.25 U/ml in comparison to 16.45 U/ml in healthy controls) and markers of renal dysfunction, including increased urea, uric acid, and urine albumin/creatinine ratio. Multiple regression analysis identified anti-TPO as an independent predictor of kidney function. Subgroup analysis revealed significantly lower eGFR and elevated renal markers in anti-TPO positive patients.

CONCLUSIONS

Conclusion: In the present study we noticed that elevated anti-TPO levels are associated with renal dysfunction in elderly hypothyroid patients, suggesting a potential role for anti-TPO in renal impairment. We observed that hypothyroid patients with increased anti-TPO levels exhibited a substantial decrease in eGFR, along with elevated serum creatinine, uric acid, and urine microalbumin levels.

Geriatric testing

P1254

CELL-FREE MITOCHONDRIAL DNA LEVELS AS A POTENTIAL BIOMARKER FOR PREDICTING COGNITIVE IMPAIRMENT IN THE GERIATRIC POPULATION OF INDONESIA

M.P. Semadhi³, D. Muliaty², E. Halimah¹, J. Levita¹

¹Padjadjaran University

²Prodia Laboratory

³Prodia Laboratory; Padjadjaran University

BACKGROUND-AIM

The Indonesian Ministry of National Development predicts the geriatric population will increase to 15.8% in 2035. The challenge of that situation is to maintain degenerative health issues, specifically cognitive impairment. Cognitive impairment (CI) is often used to describe conditions between normal, mild cognitive impairment, and severe cognitive impairment in geriatric patients. The decline of mitochondrial function, especially the decreased ability of autophagy/mitophagy and fission/biogenesis as measured by the level of mitochondrial DNA, is thought to be a major factor causing cognitive impairment. This study aims to determine cell-free mitochondrial DNA levels as a potential risk predictor of cognitive impairment in geriatric patients in the Indonesian population.

METHODS

The research was conducted on 120 geriatric patients aged ≥ 60 years old who were physically healthy (no DM, CKD/AKD, cancer, or infectious diseases). All patients were classified into two groups: mild to severe cognitive impairment (N = 96) as the case group and normal cognitive impairment (N = 24) as the control group using the Indonesian Montreal Cognitive Assessment (MoCA-Ina), with a cut-off of ≥ 25 for normal category. Patients are examined for cell-free mitochondrial DNA level. The statistical tests are using SPSS version 22.

RESULTS

The results showed that there were no significant differences in age between the two groups. We found there were significant differences in cell-free mitochondrial DNA levels ($p < 0.05$) between the two groups. The marker shows a higher level in the case group compared to the control group (1.4-fold). Statistical analysis by ROC and AUC model values shows the cut-off levels of cell-free mitochondrial DNA were 200,819.66 copies with a sensitivity of 74% with an odds ratio (CI95%): 0.5 - 3.6x.

CONCLUSIONS

The level of cell-free mitochondrial DNA has the potential to predict the risk of cognitive decline from normal to mild and severe cognitive impairment. The risk prediction will help to maintain cognitive health in geriatric patients in the Indonesian population.