



Aspects of CKD epidemiology in the elderly

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Introduction and aims

The frequency of Chronic Kidney Disease (CKD) increases with age, however its significance in elderly is not certain. The aim of our study was to analyze the classic risk factors of CKD development and their influence on CKD prevalence in elderly Polish population aged 75+.

Methods

Data from 918 participants (F 452, M 466) of the cross-sectional epidemiological study Wobasz Senior were analyzed. CKD was detected if the MDRD formula based eGFR was <60 mL/min/1.73m². Creatinine (Jaffe reaction), LDL and total cholesterol concentration were measured. Diagnosis of diabetes mellitus (DM) was based on patient's declaration and/or if the fasting glucose was ≥ 126 mg/dl on two separate measurements. Arterial hypertension (AH) was diagnosed when the blood pressure of the two measurements taken on two separate visits was elevated $\geq 140/90$ mmHg and/or the patient was receiving hypotensive drug(s). Data on co-morbidities and anthropometric parameters were analyzed. The logistic regression analysis was performed to calculate odds ratios (ORs) and confidential intervals (CI). The Chi-square test was used to assess statistical significance.

Results

1. The prevalence of CKD in individuals aged 75 years and above was 26.9% (95%CI: 23.1-30.9)
2. Following factors were found to increase chance of having CKD:
 - cardio-vascular disease (OR 1.87, 95%CI: 1.15-3.03, $p < 0.05$),
 - rising age (OR 1.08, 95%CI: 1.02-1.14, $p < 0.05$).
3. Several classic CKD risk factors were found **not to** play any significant role in CKD development in elderly population. These were:
 - Diabetes mellitus (DM) (OR 0.67, 95%CI: 0.31-1.43, $p > 0.05$),
 - Arterial hypertension (AH) (OR 1.5, 95%CI: 0.87-2.56, $p > 0.05$),
 - increased LDL (OR 0.95, 95%CI: 0.4-2.26, $p > 0.05$),
 - rising BMI (OR 0.97, 95%CI: 0.93-1.03, $p > 0.05$).
4. The rise in waist-to-hip ratio within the range of normal reference values was a protective factor (OR 0.13, 95%CI: 0.00-0.66, $p < 0.05$).
5. Prevalence of DM among CKD individuals (11.7%; 95%CI: 7.4-18.0) was comparable to that in general population 75+.
6. Prevalence of AH was higher in individuals with CKD (91.0%, 95%CI: 86.4-94.1) when compared to those without (80.3%, 95%CI: 76.5-83.7).

Conclusions

Prevalence of CKD in elderly is high. Presence of cardio-vascular disease is the main risk factor of CKD in the elderly population, whereas DM is not.