Streszczenie w języku angielskim

Introduction

Oxidative stress (OS) is usually considered as a disturbance in regular function of an organism, which is why it is probably involved in pathophysiology of numerous diseases. The disturbed levels of OS markers may lead to the major damage within the organism's cells, tissues and organs. According to publications, some of the OS markers, including 2-cysteine peroxiredoxins (2-Cys-PRDXs) were found to be associated with the pathogenesis and progression of chronic kidney disease (CKD). 2-Cys-PRDXs belong to commonly known oxidative stress-related markers and are a part of the antioxidant and redox-signaling systems. Their most known function is the ability to reduce excessive levels of hydrogen peroxide - one of the major oxidative stress mediators, moreover they are also functioning as chaperones and regulators of signal transduction. We hypothesize that 2-Cys-PRDXs could be differentially involved in the pathogenesis of various types of glomerulonephritis (GNs). The possible changes in their concentration may serve as markers of specific GN, e.g. IgA nephropathy (IgAN), membranous nephropathy (MN) or lupus nephritis (LN). Therefore, they may be considered as a new diagnostic and/or predictive indicators for GNs of different etiology.
The aim of this dissertation was to evaluate 2-Cys-PRDXs serum concentrations in patients with IgA nephropathy (IgAN), membranous nephropathy (MN) and lupus nephritis (LN).

Methods

The study included 138 participants, including 108 patients with biopsy-proven GNs: IgAN (47) MN (26), LN (35) from Nephrology and Transplantation Outpatient Clinic, University Clinical Center of Medical University of Warsaw and 30 healthy age- and sex-matched controls. Serum concentrations of 2-Cys-PRDXs (1-5) were measured with commercial ELISA assays and correlated with demographic and clinical data.

Results

a. The results of our study confirm, that serum 2-Cys-PRDXs concentrations varied depending on the GN type – IgAN, MN and LN.
b. We observed the significant correlation of 2-Cys-PRDXs with lower estimated glomerular filtration rates, complement serum proteins, hemoglobin and body mass index.
c. The study indicates that individual 2-Cys-PRDXs may play significant roles

in the pathophysiology and the progression of selected GNs.

Conclusions

1) The results of this study suggest that oxidative stress plays an important role in chronic kidney disease, including GN's described in the current thesis.

2) Considering the differential concentration of individual 2-Cys-PRDXs in selected GN's, we may assume, that they have significant meaning in pathophysiology of these diseases.

3) According to our research (confirmed by patent application), 2-Cys-PRDX evaluation in GN's may validate their potential to be used as a new and supplementary diagnostic markers in IgAN, MN and LN.

Our study encourages future, prospective research on 2-Cys-PRDXs as possible markers in kidney diseases.