

PROTEINURIA AND HAEMATURIA IN PATIENTS WITH LUNG CANCER

M. Delijski, V. Madzhova, S. Boyadzhieva*, D. Dimitrova-Kadinova, M. Kozhuharova

*Department of Internal Medicine, *Department of Pathology, Varna*

It's known that patients with malignant diseases have more frequent abnormal urinary findings without anamnesis and clinical data of renal involvement. Lung cancer is not rarely connected with proteinuria and haematuria according to different mechanisms.

The aim of the study is to ascertain whether there is an increased occurrence of proteinuria and haematuria among lung cancer patients and to search a dependence on the histological type and the chemotherapy treatment. We studied two groups of lung cancer patients: 120 pts. with chemotherapy and 50 autopsy cases, died from bronchogenic carcinoma, investigated by their history and by autopsy. The retrospective study included 107 male, with an age range of 29-76 years and 13 female, with an age range of 40-75 years, admitted in the Department of Internal Medicine, Division of Chemotherapy. According to the histological type the patients were divided into 2 groups: small cell carcinoma - 40 pts., including "oat cell" type - 16 pts. and non-small cell carcinoma: squamous cell - 47pts., adenocarcinoma -9 pts. and large cell carcinoma - 8 pts. The pathological study included 50 autopsy cases, died from lung cancer, 47 male, with an age range of 39-80 years and 3 female, with an age range of 73-80 years. They were divided morphologically in 3 groups: small cell carcinoma - 32 pts., squamous -cell - 9 pts. and adenocarcinoma - 9 cases. The patients with renal diseases, such as pyelonephritis, glomerulonephritis, cystic disease and nephrolithiasis were excluded from the study as possible etiological factors for proteinuria and haematuria. We had in mind concomitant diseases as COPD and cor pulmonate, hypertension and heart failure as probable reasons for urinary abnormalities. In the retrospective study, 23 pts (19,16%) and 8 autopsy cases (16%) had haematuria. The most common histological type with clinical evident haematuria was the small cell lung carcinoma. Proteinuria was found in 21 pts /17,5%/ with chemotherapy and in 11 autopsy cases /22%/, registered before death. It was prevalent in the small cell histological type, too.

The high frequency of haematuria and proteinuria among the

lung cancer patients led us to investigate the kidneys of autopsy patients, died from bronchogenic carcinoma. In 8 cases /16%/ were found renal metastases, which had not been proved neither clinically, nor instrumentally before death. In 6 pts. the metastases were found in the small cell carcinoma, 1 pt. was with adenocarcinoma and 1 pt. with squamous cell type. So, the share of the small cell carcinoma in the renal metastases was 75%. In 6 cases we found a coincidence with the renal metastases and the clinical proved haematuria, i.e. in 75% the metastases were manifested with urinary abnormalities. In 2 pts. histologically was found a direct metastatic invasion into the pyelon and the calices and in these cases we connected the haematuria straight with the renal metastases. In 4 pts, treated with Methotrexat we found haematuria and proteinuria. It's known that the nephrotoxicity of this antimetabolic agent is rare but severe, with tubulo-interstitial damages, so we may discuss that the nephrotoxic effect of Methotrexat is one possible explanation for haematuria and proteinuria in these lung cancer patients. In 7 pts, treated with Cisplatin we didn't find urinary abnormalities, probably because of the low dose of the medicine. In some patients with severe COPD and cor pulmonare and hypertension and heart failure we may discuss so called "congestive kidney", in which the process of necrobiosis and necrosis led to cell injury.

Table 1. Frequency of haematuria, proteinuria and renal metastases and dependence on the histological type of lung cancer

Index	Retrospect.study	Pathol.study
Haematuria/share of small cell type	19,16%/74%	16%/100%
Proteinuria/share of small cell type	17,5%/76,2%	22%/81,8%
Renal meta/share of small cell type	-	16%/75%

In conclusion, there is an increased occurrence of haematuria (19,16%) and proteinuria (17%) among lung cancer patients. Most commonly renal metastases have caused these urinary abnormalities, although they have not been discovered by clinical and instrumental methods ante mortem. In 75% of renal metastases the histological type is small cell carcinoma. Other possible reasons with less significance are Methotrexat treatment and "congestive kidney".