Territory-wide retrospective study on the prevalence of long-term renal outcomes and other adverse events among patients with mesothelioma

PI: Dr. Kwok Wang Chun
Clinical Assistant Professor, Department of Medicine,
School of Clinical Medicine, Li Ka Shing Faculty of Medicine,
The University of Hong Kong

Objectives:
To conduct a territory-wide retrospective study to estimate the prevalence of adverse renal outcomes including acute kidney injury, development of renal progression and upstage in chronic kidney disease stage among patients with mesothelioma and investigate the risk factors for its development.

Background:
Malignant mesothelioma is an uncommon cancer that is associated with exposure to asbestos. Chemotherapy, anti-angiogenic and immune checkpoint inhibitors are frequently used to treat mesothelioma. However, the use of these agents has potential risks of nephrotoxicity. With the advances of treatment modalities for mesothelioma, patients with mesothelioma will have longer survival. Yet, they will be exposed to more agents that can result in nephrotoxicity, which in turns also affect the treatment available.

Methodology:
Data extraction and cleaning from the Clinical Data Analysis and Reporting System (CDARS) were performed, and a total of 222 mesothelioma patients were selected for the analysis.

Impact:
The outcomes of the study will have significant implications for the management of mesothelioma, including the identification of at-risk populations and early interventions to prevent the development of adverse renal outcomes.

Result and Conclusion:
The results indicated that adverse renal outcomes from mesothelioma treatment are common. While some of these adverse outcomes are transient, others can accumulate or gradually progress, leading to long-term adverse outcomes.

1. There were 183 (82.4%), 38 (17.1%) and 1 (0.5%) patients with stage 1, 2 and 3 chronic kidney disease at the time of diagnosis. By the end of the study period, 144 (64.9%) at stage 1, 67 (30.2%) at stage 2 and 11 (5%) at stage 3.
2. Renal progression occurred in 31 (14.0%) patients during the follow-up period.
3. CKD upstaging was observed in 47 (21.2%) patients.
4. Acute kidney injury developed in 18 (8.1%) patients.
5. Grade 3 to 4 hematological toxicity was observed in 132 (59.5%) patients.
6. Neutropenic fever occurred in 18 (8.1%) patients.
7. Grade 3 to 4 hepatotoxicity developed in 19 (8.6%) patients.