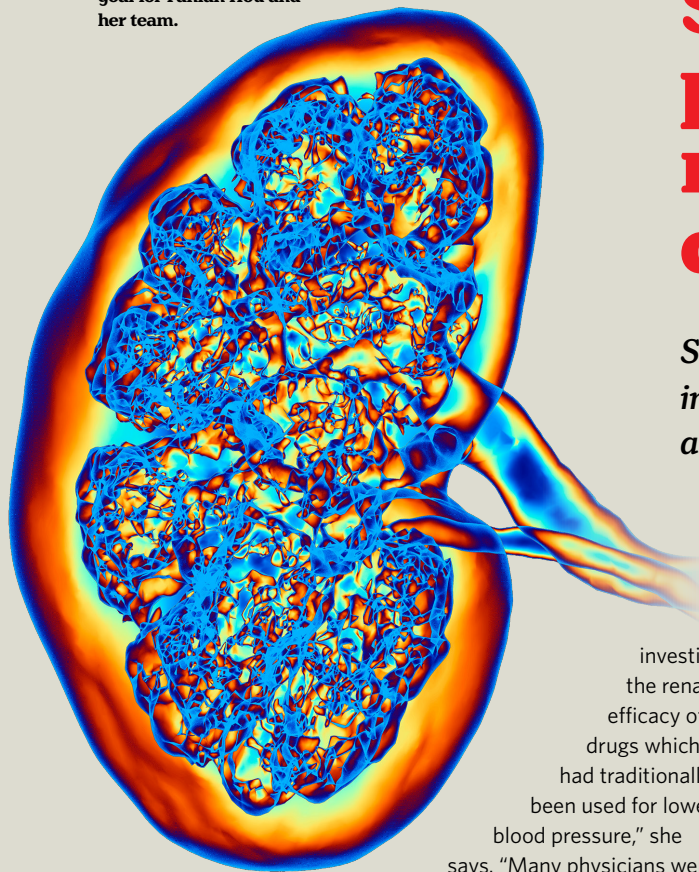


A world without kidney diseases is the ultimate goal for Fanfan Hou and her team.



After 30-year careers, SMU professors Fanfan Hou and Qifa Liu are still on the frontline for patient-centric treatments for kidney and blood diseases.

Progressive and irreversible, chronic renal diseases affect the filtering function of the kidneys, and necessitate the removal of waste products and excess fluid through dialysis treatment. However this was not an affordable option for many in China back in the 1990s.

Hou, a member of the Chinese Academy of Sciences, and director at the National Clinical Research Center for Kidney Disease at SMU, says the physical and psychological trauma suffered by many renal failure patients was a major motivation for her research.

"I was determined to

investigate the renal efficacy of drugs which had traditionally been used for lowering blood pressure," she says. "Many physicians were initially against this idea due to the potential adverse effects of high levels of creatinine, the byproduct of muscle metabolism, in the serum."

Her team published a paper in the *New England Journal of Medicine* in 2006 on the effectiveness and safety of an ACEI (inhibitor of angiotensin-converting enzyme). In the *Journal of the American Society of Nephrology*, they also showed evidence for reduced risks of renal failure in patients with chronic renal insufficiency, based on their dose strategies respectively for ACEI and a blocker of angiotensin II type 1 receptor.

In 2016, the journal published Hou's large cohort study on 71,151 patients in 282 cities of China over 11 years, which for the first time, uncovered the association of fine airborne particulate matter with diseases

of the glomerulus, a cluster of capillaries near the nephron in the kidney. That led to a 2018 paper in *Nature Reviews Nephrology*, bringing global awareness to the impact of urban development on kidney health.

"Establishing causality, not merely associations, together with partnering nephrologists worldwide would take our research further," says Hou."

For Liu's team at the department of haematology of SMU, Nanfang Hospital, a dedication to leukaemia patients starts from a precise diagnosis based on integrated multi-omics classification, including improved traditional morphologic, immunologic, and cytogenetic analysis with next-generation sequencing.

They also propose strategies to prevent relapse by optimizing immunotherapy and potential targeted therapies, which were published in *Lancet Oncology* in 2020.

Qifa Liu has been shaping studies into leukaemia, including cancer blood cells.

Supporting patients with renal and blood diseases

SMU professors are spearheading life-saving innovations for patients with kidney disease and leukaemia.

"Our research contributes to the formulation of clinical pathways, which involve standardized, evidence-based multidisciplinary management plans," says Liu. "They have demonstrated an increase of long-term survival rates of both acute myeloid and lymphocytic leukaemia to nearly 70%, bringing hope for a cure for leukaemia." ■

