

Setting Research Priorities in Geriatric Nephrology through a Delphi Study

Dawn Sage*

Department of Surgery, Cornell University, New York, USA

Corresponding author: Dawn Sage, Department of Surgery, Cornell University, New York, USA, E-mail: dawn.segev@gmail.com

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Description

Despite the significant increase in the number of older persons suffering from kidney disease, there is still little data to direct clinical treatment for this population. To establish agreement on research objectives for clinical geriatric nephrology, the Kidney Disease and Aging Research Collaborative (KDARC) carried out a delphi analysis. Researchers and clinicians with geriatric nephrology research and clinical experience in the US and Canada. Free-text summaries of research goals deemed important for enhancing the clinical care of elderly patients with renal disease were provided by participants in the first Delphi round. Concepts were categorized by Delphi moderators using inductive content analysis. Participants in the second and third rounds iteratively went over the topics, chose their top five priorities and provided feedback that was utilized to update the categories. Of the 121 invitations, 48 (84% of enrolled participants) finished all rounds of delphi and 57 (47%) finished the first round. Frailty and physical function (54%), communication and decision-making about treatment options for older adults with kidney failure (69% agreement), quality of life, symptom management and palliative care (67% agreement), cut therapies for kidney disease to specific needs of older adults (42%) and caregiver and social support (35%). These were the five priorities with the highest percentage of agreement after three rounds. Person-centricity and health equity were found to be cross characteristics that influenced every topic. Low response rate and little involvement from senior scholars and physicians as well as private practitioners. Clinical research goals in geriatric nephrology that have the most potential to enhance treatment for elderly patients with kidney.

Extracellular vesicles in nephrology

The results offer the geriatric nephrology community a road map for coordinating and optimizing research endeavors. Two well-established specialty interest groups that actively support a community of veterinarians working to improve these advocacy organizations and some might contend that specialization has made the field too expensive, too narrowly focused and has hampered the provision of basic or even specialist veterinary treatment. Denying specialist development, along with the advancements in diagnostic and therapeutic innovations that come with it, however, just as effectively stifles therapeutic options for animals whose ailments respond to specialized

treatment but not to traditional "basic medicine." Pet owners who want more are denied it. Extracellular vesicles-small, membrane-bound bundles released by almost every cell in the body-have drawn attention in the field of nephrology. Scientific focus switched to their potential as biomarkers for kidney disorders as monitoring and diagnostic tools following the initial analysis of their transcriptome and proteomic content. The possibility that extracellular vesicles facilitate intercellular signaling inside the nephron and between the kidney and other organs throughout the body has recently come to light. However, because there are many ways to separate extracellular vesicles, producing fractions with varying sizes and levels of purity, ambiguous terminology and consequently reproducibility limitations, the field of extracellular vesicle research has had difficulty translating significant findings to the clinical setting. Thus, the International Society of Extracellular Vesicles has worked to lower these obstacles through a continuous effort to improve the uniformity and rigor of extracellular vesicle research. This effort led to the creation of the "Minimal Information for Studies of Extracellular Vesicles" (MISEV) guideline, which in its current third version offers the most succinct recommendations for studying extracellular vesicles to date. This brief review summarizes the progress made by the previous Minimal Information for Studies of Extracellular Vesicles (MISEV) recommendations.

Urine-derived extracellular vesicles

Extracellular Vehicles (EVs) were discovered in urine. However, the first succinct description of their protein profile, which shows that urine EVs (uEVs) come from both urothelial cells and kidney epithelial cells of the nephron, was not provided for nearly 20 years. Protein analysis of bladder and nephrostomy urine has confirmed this idea by showing a strong overlap of EV proteins between the two fractions. Furthermore, EVs produced from nephron epithelial cell culture models showed EV signatures that were comparable to those of us from healthy donors, indicating that the bulk of us are produced by the epithelial cells that are in direct contact with the original urine. EVs have an impact on kidney function and this brief overview shows how understanding how EVs function as intercellular signaling mediators might help us better understand kidney illnesses and their potential use as therapeutic agents and biomarkers. Additionally, we will highlight the present obstacles

to the clinical usage of EVs and show how the new Minimal Information for Studies of Extracellular Vesicles (MISEV) guidelines can be leveraged to fully fulfil EVs' potential for improved nephrology treatment.