

Abstract Submission No. : 9178

Automated assessment of kidney pathology for glomerular diseases

Hajeong Lee
Seoul National University, Korea

Recent explosive advances of artificial intelligence (AI) and associated technologies have been tried to be applied in a variety of areas in healthcare. Especially, deep-learning algorithms have been rapidly grown up enough to be used in medical image analyses starting from interpretation of radiologic studies or tumor histologies. Kidney pathology is a unique and complex area in medical pathology. Different from cancer histologies that could be analyzed relatively easier under the support of preexisting molecular markers, non-tumor medical kidney histologies are much more complex and need specialists of wide experience. There are many scoring or staging systems that may need regular updates in both glomerular diseases and allograft rejections. Moreover, it is difficult to train medical kidney pathology specialists due to the limited number of pathology cases in each institution. In this situation, new applications of AI to kidney pathology driven by the successful AI deployments in digital pathology may give us an important opportunity to improve the current limitations. Furthermore, synergetic developments of AI's own interpretation of kidney pathology linked with clinical manifestations will open a new possibility to understand kidney pathology. In this lecture, we will overview the current status of automated assessment of kidney pathology for glomerular diseases and discuss the future directions.