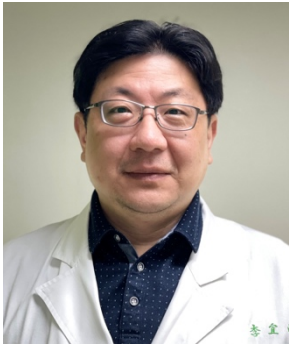


# 2025 臺中榮民總醫院院慶國際醫學研討會 TCVGH International Medical Conference

## AI in Medicine

Future of Healthcare by AI



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Professional Career	<ol style="list-style-type: none"><li>1. Senior Neurologist, Taipei Veterans General Hospital (2008.11~ )</li><li>2. Adjunct Professor, Dpt of Neurology, National Yang Ming Chao Tung University School of Medicine (2016.8~ )</li><li>3. Chief, Division of Peripheral Nerve System Disorders, Neurological Institute, Taipei Veterans General Hospital (2018.8~2024.7)</li><li>4. Chairperson, Division of Clinical Neurosciences, Dpt of Life Science, Ministry of Science and Technology, Taiwan (2018.1~2020.12)</li><li>5. Corresponding Fellow, American Academy of Neurology (2018~ )</li><li>6. Corresponding Fellow, American Neurological Association (2023~ )</li></ol>	
Speech Title	Advances in ALS genetics and emerging precision therapies	



Abstract( 200 words) :

Amyotrophic lateral sclerosis (ALS) is a genetically and clinically heterogeneous disorder, with recent advances in molecular genetics enabling unprecedented opportunities for precision therapy. Over the past decade, our studies on 650 unrelated Taiwanese ALS patients have defined the local genetic spectrum, revealing variants in *SOD1*, *TARDBP*, *FUS*, *C9ORF72*, *TBK1*, *CCNF*, *DNAJC7*, and *NEK1*, as well as intermediate CAG repeat expansions in *TBP* and *HTT*. These findings underscore the population-specific features compared with Western cohorts, with implications for genetic diagnosis, counseling, and trial readiness. The translation of genetic discoveries into targeted interventions has accelerated in recent years. In Taiwan, we introduced the antisense oligonucleotide Tofersen for *SOD1*-ALS, achieving meaningful clinical benefit in a patient with a pathogenic mutation. We also initiated participation in the FUSION trial, which evaluates an ASO therapy targeting *FUS* mutations, and the first-in-human ALN-*SOD1* RNA interference trial, expanding therapeutic options for genetically defined subgroups. This talk will review key advances in ALS genetics, highlight the unique Taiwanese landscape, and outline the development and clinical implementation of emerging precision therapies. Future directions for integrating genetic testing into routine ALS care, improving access to targeted interventions, and leveraging biomarkers for patient selection and treatment monitoring will also be discussed.