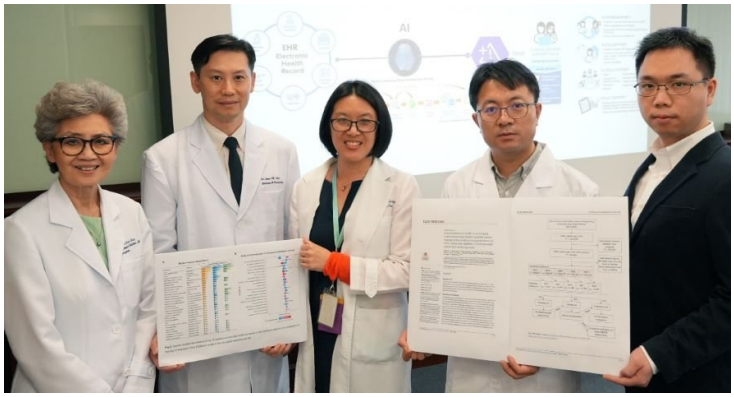
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Hong Kong develops machine learning model to predict risk of severe hypoglycemia in diabetics

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The model has the potential to be integrated into electronic health record decision support system



In Hong Kong, one in three adults over the age of 65 have diabetes. To improve the management of this group of older adults, The Chinese University of Hong Kong (CUHK)'s Faculty of Medicine (CU Medicine) conducted a territory-wide analysis of the big dataset from the Hospital Authority Data Collaboration Laboratory (HADCL).

Severe hypoglycemia is a common acute complication in patients with diabetes, which is associated with an increased risk of falls, cardiovascular disease, dementia and all-cause mortality. Using data from HADCL, CU Medicine developed a novel machine learning model that can predict the risk of severe hypoglycemia in the next 12 months among older adults with diabetes.

With a high positive predictive value of 85%, the model has the potential to be integrated into electronic health record decision support systems for pre-emptive intervention in older adults at the highest risk.

Dr Elaine Chow, Associate Professor, CU Medicine's Department of Medicine and Therapeutics and lead investigator for the research, said, "The newly developed model can be integrated into the local electronic health record system to identify high-risk adults for pre-emptive intervention – for example, by switching to diabetes medications with lower hypoglycemic potential or correcting the timing and dosage of insulin injections."

Professor Juliana Chan, Chair Professor of Medicine and Therapeutics at CU Medicine, concluded, "As the mortality gap between older adults with and without diabetes has not narrowed, we need to take action to address the excess mortality associated with diabetes by providing better and more precise management for patients. Our machine learning model offers a highly efficient and low-cost approach to identifying older adults with a very high risk of hospitalisation due to severe hypoglycemia, enabling corrective action for this group of patients without compromising the glycemic control in low-risk elderly patients."