

# Flu vaccination associated with lower dementia risk in patients with heart failure

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Influenza vaccination is associated with a lower risk of dementia in patients with heart failure, according to a study in more than 20 000 patients presented today at Heart Failure 2016 and the 3rd World Congress on Acute Heart Failure by Dr Ju-Chi Liu, director of the Division of Cardiovascular Medicine, Department of Medicine, Taipei Medical University - Shuang Ho Hospital, in New Taipei City, Taiwan.

"Previous studies have shown that there is link between impairment in cognitive function and heart failure," said Dr Liu. "Some reports have also suggested that inflammation after getting the flu might contribute to dementia. However, there are no solid data to demonstrate that [influenza vaccination](#) could decrease the relative risk of dementia in patients with heart failure."

The current study investigated whether heart failure patients who had received the flu vaccine had a lower risk of dementia. The study included all patients over 60 years of age who visited healthcare facilities in Taiwan with a diagnosis of heart failure during 2000 to 2012. Those who had dementia prior to being diagnosed with heart failure were excluded from the study. Patients were recruited from the National Health Insurance Research Dataset, which holds information on 98% of Taiwan residents.

The study included 20 509 patients with heart failure. Of those, 10 797 received at least once vaccination against influenza and the other 9712 were not vaccinated during the 12 year follow-up period.

After adjusting for factors that might influence the association, the investigators found that heart failure patients who had received the [flu vaccine](#) were 35% less likely to develop dementia than those who had not been vaccinated. Those who had been vaccinated more than three times had a 55% lower dementia risk.

"We think that the flu virus can activate the immune response and cause inflammation which may injure the brain cells," said Dr Liu. "Respiratory infection during flu can induce changes in blood pressure and heart rate, referred to as an unstable haemodynamic status, which may also harm the brain tissue."

"These effects of the flu could play a role in the development of dementia, particularly in heart failure patients who already have impaired circulation in the brain," added Dr Liu.

He continued: "Vaccination reduces the chance of getting the flu, which means that the associated immune activation, inflammation and unstable haemodynamic status do not occur. This could explain the reduced risk of developing dementia. The more vaccinations patients received, the less chance they had of getting the flu, which might be why they had an even lower risk of dementia."

When they examined the association by age, the researchers found that vaccinated heart failure patients had a 44% lower risk of dementia if they were over 70 years old and a 26% lower risk if they were between 60 and 69 years old. Vaccinated male heart failure patients had a 40% lower risk of dementia while vaccinated female heart failure patients had a 31% lower dementia risk.

Dr Liu said: "The risk of dementia increases with age. Therefore, the difference in risk between the vaccinated and nonvaccinated groups is more obvious in older patients."

"Our findings indicate that influenza vaccination plays an important role in patients with heart failure," continued Dr Liu. "The flu shot not only decreases the risk of respiratory infection and death from pneumonia, but may also decrease the risk of dementia in future."

He concluded: "If influenza vaccination can prevent

the inflammation induced by flu, it may decrease the risk of dementia in heart failure patients. This is an important prospect for [dementia](#) prevention. More efforts are needed to ensure that patients with [heart failure](#) are vaccinated against influenza every year. Our data suggests that these patients benefit even more from vaccination than was previously thought."

Provided by European Society of Cardiology

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