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AN anti-inflammatory drug used during World War II has emerged as a potential new flu treatment that could be used at any stage of the illness.

Australian researchers have found that two existing medications – one once used to prolong the life of penicillin and now called on to treat gout, and the other an experimental anti-arthritis drug – could be key to reducing flu-related deaths.

Co-lead researcher Dr Michelle Tate, from the Hudson Institute of Medical Research in Melbourne, said it was not the virus itself that was deadly, but the over-reaction of the immune system that went into a dangerous overdrive causing tissue and organ damage.

"The flu virus has become resistant to antivirals, and you have to take them within the first couple of days of getting sick," Dr Tate said.

"People typically present to hospital five days after they get sick, and apart from oxygen and supportive care, there are no actual treatments for them at this point. Unfortunately with the flu, in severe cases the immune system builds to a point where it's too strong and causes damage."

Three years ago the Hudson team uncovered a key player in what triggers the immune system to become "hyper-inflammation" in response to flu. The next step was to take two drugs that act on this protein – Probenecid and a second drug called AZII645373 – and test them in mice. Both drugs were able to dampen the immune system – at all stages of influenza – so the animal could fight off infection.

The findings have been published in the *British Journal of Pharmacology* as Adelaide battles one of its most deadly flu seasons.