Vaccination may reduce the severity of the flu in vaccinated but still infected patients

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The research group Epidemiology, Prevention and Control of Communicable Diseases -led by Professor Àngela Domínguez, from the Department of Medicine of the UB. Credit: Universitat de Barcelona

Even when influenza vaccination is ineffective in preventing the flu, it could still reduce the severity of the infection, according to an epidemiological study led by Professor Angela Dominguez from the Health Institute Carlos III. The study was published in *Eurosurveillance*.

Each year, between 5 and 20 percent of the global population acquires the flu, with between 3 and 5 million severe cases of illness and between 300,000 and 500,000 deaths worldwide. The new study analyses the effectiveness of anti-influenza vaccines to reduce the most severe effects of the flu: ICU admissions and death of patients whose vaccine did not prevent them from getting infected. To do so, the researchers studied all severe cases of influenza in 12 Catalan hospitals during the influenza seasons in 2010-2011 and 2015-2016, a period during which 1,727 patients over 18 entered the hospital, 591 being ICU admissions and 223 resulting in deaths.

Results show that, among those ICU admissions and deaths, vaccination was less frequent (21.2 percent of the cases) than the rest of the patients with more benign symptomatology, 29.7 percent of them being vaccinated. Therefore, the effectiveness of influenza vaccination to prevent ICU admissions or death among the total people in hospital for influenza was 23 percent, and in particular, 44 percent for the group of people aged 65. "We should add the effectiveness of the vaccine to prevent the flu to these percentages. These data highlight the need of an influenza vaccine for each season for those people who are more likely to show severe types of influenza, such as people over 65, and people with other diseases, for whom the influenza vaccine was not enough to prevent the infection from appearing," note the authors.

In the study, the researchers note that the immune system plays a role. "People who were previously infected by the virus or who received anti-influenza vaccines would get benefits, at least, in the pre-existing cross-reactive memory of cytotoxic T lymphocytes, which would reduce the

severity of the infection, even without protective antibodies," they conclude.

More information: Pere Godoy et al, Influenza vaccine effectiveness in reducing severe outcomes over six influenza seasons, a case-case analysis, Spain, 2010/11 to 2015/16, *Eurosurveillance* (2018). DOI: 10.2807/1560-7917.ES.2018.23.43.1700732

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