Influenza–myocardial infarction link confirmed

MedWire News: There is consistent evidence that influenza triggers acute myocardial infarction (MI) and possibly cardiovascular (CV) death in some individuals, say the authors of a systematic review.

More studies are needed, however, to support the effectiveness of influenza vaccines in reducing the risk for cardiac events in those patients with established CV disease, say Charlotte Warren-Gash (Royal Free Hospital, London, UK) and colleagues.

The influenza virus has extensive effects on inflammatory and coagulation pathways, which may lead to destabilization of vulnerable atherosclerotic plaques and coronary artery occlusion – the major cause of acute MI. Furthermore, recent experimental studies in mice have supported a link between influenza infection and coronary artery remodelling.

In the current study, Warren-Gash and colleagues performed a literature search for publications that examined the association between influenza infection (including influenza-like illness and acute respiratory infection) and MI and CV death.

They included ecological, case–control, cohort, case-only studies (eg, self-controlled case series or case-crossover studies), and randomized controlled trials.

Of the 39 studies examined there was "consistent associations between influenza and acute MI," say the researchers, with odds ratios and rate ratios ranging from 2.10 to 4.95. Furthermore, the proportion of excess influenza deaths that were due to CV disease ranged from 35–50%.

Two small randomized trials assessed the protection provided by influenza vaccine against cardiac events in people with existing CV disease.

Whereas one trial found that influenza vaccination gave significant protection against CV death, the other trial was inconclusive.

A pooled estimate from a random-effects model revealed a protective, but nonsignificant, effect of the vaccine (relative risk=0.51).

Warren-Gash and colleagues comment in *The Lancet Infectious Diseases*: "We believe influenza vaccination should be encouraged wherever indicated, especially in people with existing CV disease, among whom there is often suboptimum vaccine uptake.

"Further evidence is needed on the effectiveness of influenza vaccines to reduce the risk for cardiac events in people without established vascular disease."

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