MedicalXpress

New studies confirm chest compressions alone

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Two large-scale studies published in the Dec. 18 issue of the American Heart Association's medical journal, *Circulation*, report that the chances of surviving cardiac arrest are no better – and may be worse – when bystanders perform mouth-to-mouth breathing than if they press on the chest without interruption.

n part because of the hesitance of bystanders to initiate CPR, survival rates following out-of-hospital cardiac arrest have remained dismal and virtually unchanged despite several changes of the CPR guidelines over the past four decades. In the two latest studies, research groups from Sweden and Japan compared survival rates of cardiac arrest victims after bystanders used either traditional CPR with mouth-to-mouth breathing or Chest-Compression-Only CPR.

Both studies found no statistically significant difference in survival rates. The Swedish study, led by Katarina Bohm, RN, of the South General Hospital in Stockholm, analyzed outcomes of nearly 10,000 cases, while a team led by Taku Iwami, MD, at Japan's National Cardiovascular Center in Suita, Japan, looked at the outcomes of 4,900 cases of witnessed out-of-hospital cardiac arrest. Robert Berg, MD, professor of pediatrics at the UA College of Medicine and a member of the Sarver Heart Center Resuscitation Research Group, co-authored the latter study.

"These independent findings confirm what our Resuscitation Research Group and others have found," says Gordon A. Ewy, MD, director of

The University of Arizona Sarver Heart Center, where Continuous-Chest-Compression CPR without mouth-to-mouth breathing was pioneered. “To rescue someone who suddenly collapses for no apparent reason, mouth-to-mouth breathing makes no sense.”

Shortly before the two latest observational studies were published, Dr. Ewy and his colleagues reported the results of a laboratory study suggesting that cardiac arrest patients face better odds of survival if they receive continuous chest compressions than if treated with standard CPR, in which chest compressions are interrupted by mouth-to-mouth breaths.

“Studies have shown over and over again that four out of five bystanders would not do CPR because of the mouth-to-mouth part,” says Dr. Ewy, who has commented on the two new studies in an invited editorial published in the same issue of Circulation. “If people don’t have to worry about the so-called rescue breathing, they are much more likely to actually do CPR on someone who needs it. This fact alone is the key to saving more lives. If someone calls the emergency medical services and does nothing, the individual has almost no chance of surviving.”

Earlier this year, the then-largest study comparing survival rates of cardiac arrest victims in the light of the kind of rescue efforts performed by bystanders concluded that chances of leaving the hospital alive were actually higher for patients who received Continuous-Chest-Compression CPR (Cardiopulmonary resuscitation by bystanders with chest compression only (SOS-KANTO): an observational study; Lancet 2007:369:920-926).

Dr. Ewy says, “It is interesting that Continuous-Chest-Compression CPR, a technique that has not been advocated or taught and is most often performed by individuals not trained in CPR, results in similar survival as the guidelines-advocated approach, on which millions of hours and

millions of dollars have been spent teaching and advocating."

He adds that mouth-to-mouth ventilation is disadvantageous in cases of sudden cardiac arrest for three primary reasons. "A person whose heart suddenly stops, for example because of a heart attack, was breathing normally only seconds earlier so there is plenty of oxygen in the blood. The important thing is to move the blood around, and this is only possible by uninterrupted chest compressions. During CPR, blood flow to the brain and the heart is so marginal that stopping for anything, including ventilation, is harmful to the brain. In addition, research has shown that forced ventilation, including mouth-to-mouth breathing, increases the pressure in the patient's chest, which in turn inhibits blood flow back to the heart."

Source: University of Arizona