Medical Xpress

Study finds electric car does not interfere with implanted cardiac devices

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A Mayo Clinic study has concluded that patients with implanted cardiac devices such as pacemakers and defibrillators can safely drive or ride in an electric car without risk of electromagnetic interference (EMI).

The study, titled "Hybrid Cars and Implantable Cardioverter Defibrillators: Is It Safe?"

is the first of its kind to address the interaction between these devices and electric cars. It will be presented at the 2013 American College of Cardiology Annual Scientific Session in San Francisco on March 9.

In some cases, implanted devices may sense signals from electrical or magnetic objects and misinterpreted them as potential distress coming from the patient's heart.

The increasing prevalence of electric and hybrid cars, one of the fastest growing segments of the American automotive industry, prompted Mayo Clinic cardiac investigators to study the potential risk of the effects of EMI on patients with implantable devices. Mayo Clinic researchers used implantable devices from the three major manufacturers and a 2012 Toyota Prius hybrid in the study. Electric and magnetic fields were measured in six positions: from the driver's seat, front passenger seat, the left and right rear seats and in front of and behind the car from the outside.

Each position was evaluated at different speeds: 30 mph, 60 mph and at

variable speeds of acceleration and deceleration.

The 30 study participants with implanted devices were continuously monitored while rotating positions in the car and driving the car, with a particular focus on real-time detection of any interruption in the normal functionality of their devices.

Luis R. Scott, M.D., Cardiologist, and Fernando Tondato, M.D., Cardiology Fellow, both of Mayo Clinic in Arizona and the study's lead investigators, called for additional study. They said that although the study results revealed that the car tested did not generate clinically relevant amounts of EMI and that the car is safe for patients with implanted devices, more research will help define and solidify the results. "Further studies may be necessary to evaluate the interaction between implantable devices and other models of hybrid or electric cars," says Dr. Scott.

The American College of Cardiology named a poster that summarizes the study and will be presented at the conference, as a 2013 "Best Fellows In Training (FIT) Poster," which represents the top 3 percent scoring percentile of abstracts accepted for presentation at the conference.

Provided by Mayo Clinic

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