Sažetak sa skupa / Meeting abstract

Uporaba naprednog i personaliziranog IT sustava za prikupljanje i analizu podataka kod pacijenata s implantiranim uređajima za defibrilaciju

The use of an advanced and personalized IT system for data collection and analysis in patients with implanted defibrillating devices

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Modern cardiovascular research produces a great deal of data which quite often are scattered in smaller databases, and separately analyzed without an overall synthesis or conclusion. To avoid such risk we have designed and created a dedicated system for project “Predicting adverse clinical outcomes in patients with implanted defibrillating devices” (research grant from Foundation for Polish Science). This system, based on the OpenGranary technology (www.opengranary.com), and it allows to register patients, plan their entry and follow-up visits, enter all type of data from clinical evaluation, results of laboratory tests, images (e.g. from echocardiography), and cardiovascular signals (e.g. continuous ECG, pressure waveforms, cardiac impedance signals) or readings from telemetric interrogation of the implanted defibrillating devices. For all types of data there are individual ranges to control the quality of data, inform about outliers or possible errors. The OpenGranary system incorporates several statistical solutions allowing to define different filters, comparisons and on-line monitoring, e.g. comparing male and female patients, ischemic and non-ischemic individuals or any groups according to predefined cut-offs. The results are shown both as values and as figures. Since the end of October of 2010 we have enrolled 370 patients each of whom has nearly 1,000 different variables. With this system the study quality has significantly improved and its control is much easier, data mining faster and partially automated, all data are gathered in one place and the database is daily backed up, data export to different formats (txt, cvs) is easy and immediate. Additional functionality for data exchange with mobile devices like PDAs or smartphones is now being added. Our current experience shows that building a dedicated system is not only helpful but necessary for the realization of prospective clinical studies based on hundreds of variables and patients.

Keywords: big data analysis, databases, defibrillating devices.

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