Integrated international and regional services for interventional cardiology.

Sandor Vari,* Gabor Duray Istvan Preda,**Geza Nagy,***Imre Ungi****

*VARIMED LLC, Budapest Szalanci u 5, H-1124, Hungary varimed@matavnet.hu

**Semmelweis University Budapest, Faculty of Health Sciences
Department of Cardiology and Internal Medicine
Budapest, Szabolcs u. 33-35, H-1135, Hungary preda@hiete.hu

***MEDANINFO Health Care Service Limited, Miskolc Batsanyi u. 9, H-3535, medaninf@alpha.bzlogi.hu

University of Szeged, Faculty of Medicine, Cardiology Center
Szeged, Pecsi u 4, H-6701, Hungary, ungi@in2nd.szote.u-szeged.hu

ABSTRACT

The main objective of the INTERCARDIO project is the development of an Internet communication infrastructure that allows partners to join a regional and international effort to increase the efficiency of the management of the cardiovascular patients that undergo percutaneous transluminal balloon angioplasty (PTCA). A national or international Internet based multimedia dynamic image storage and forwarding system is necessary to provide quality treatment for the patient anywhere having angina in Europe.

The available angioraphy via Internet will provide a valuable comparison in the progress of the cardio-vascular disease and support quick decision making to select the necessary intervention. Beside the accessibility of the patient record, it will provide an opportunity to build a database for best practice. Therefore various patient records will be available for analysis to support medical professionals accessing interactive tools for evidence based medicine. This part of quality control is very important in cardiology and therefore methods to assess the quality of indications are essential.

First aim is the exploration of the current practice, available information technology tools and the new requirements in catheterization laboratories, as well as in the hospitals referring patients for coronary angiography and/or angioplasty; and set up a regional and international information system requirement.

One of the main drawbacks of the present practice in interventional cardiology is the operator working alone. Development of the Intelligent Decision Support System (IDSS) will support the physician to set up the right indications, build-up the best strategy of the procedure, and select the most suitable devices for the treatment of the patient. Development of a database is necessary to be able to evaluate all of the relevant clinical data. The database must reflect the pretreatment and follow-up condition (angina status, exercise capacity, drug requirement) of patients. The accepted medical guidelines, scoring and classification systems must be incorporated into the description of the angiograms. The most exact methods must be applied to enhance the translation of the characteristics into computer-based languages.

After construction of a computer-based analysis system of the images, end users will test its description power. An experimental database will be used to tune to the problem. The computer-based image description language and the database must be constructed to store all the relevant image data, and to file the final image database with descriptions of the intervention. A continuous web-based access will be used to access, feed and retrieve the multimedia patient record. This database is divided into pre-treatment, interventional and follow-up parts, to analogize the treatment modality with the outcome.

The Internet based dynamic image store and forwarding system will be evaluated by end users. During the development of tools, partners will enforce the use of common standards (European and industry), so products legally manufactured or marketed in one country in principle can move freely throughout the European Community.

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