

ANGINA PECTORIS DIAGNOSIS TOOL (HADA)

INVENTION DESCRIPTION

Angina pectoris is an intense chest pain, related to the obstruction of the cardiac muscle blood supply. This pain is commonly associated to the risk of suffering severe heart diseases, such as myocardial infarction.

Angina pectoris is commonly diagnosed under the criteria of the Emergency Department's physicians, through the evaluation of the patient's symptomatology and clinical history. However, in some cases Angina pectoris symptoms could be confused with other chest pains of uncertain origin –unstable angina–, which makes difficult to obtain a fast and reliable diagnose. For this reason, clinical decision support systems based on artificial intelligence have been developed in the last few years. However, these systems predict the patient's cardiovascular risk in the long term (usually 10 years), and have not been applied to the Emergency Departments, where fast entry of data to the system and a reliable diagnosing is crucial.

Researchers from the Intelligent Data Analysis Laboratory (IDAL) of the Electronic Engineering Department and researchers from the Medicine Department of Universitat de València, in collaboration with the Hospital Clínico de Barcelona, have developed a new tool to support the clinical diagnose of Angina pectoris (HADA). The new tool, which is applicable to Emergency Departments, helps to evaluate the immediate risk to suffer from this illness through an artificial intelligence system nourished by specific clinical databases. HADA is implemented as a web application, and has the ability to learn from the new clinical cases improving continuously the quality of the diagnoses. This way, HADA helps physicians to obtain a fast and reliable diagnose of Angina pectoris, reducing the number of false positives and improving the patient's medical care in hospitals or other medical centers.

BUSINESS APPLICATION SECTORS

The new tool can be applied in both public and private health system centers, specifically at:

- Hospital Emergency Departmens
- Community health centers
- Health clinics

TECHNICAL ADVANTAGES AND BENEFITS

The use of the Angina pectoris diagnosis tool has the following advantages:

- A reliable diagnose of the illness, and as a consequence an improvement of the patient's medical care
- Reduction of patient's future cardiovascular incidents, through the reduction of false negatives (undiagnosed Angina patients when they are really suffering it).
- Reduction of Health costs, through the reduction of false positives (diagnosed angina when the patient is not suffering it).

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DEVELOPMENT STATUS OF TECHNOLOGY

Available fully developed functional prototype of the Angina pectoris diagnosis tool, accessible through a web application.

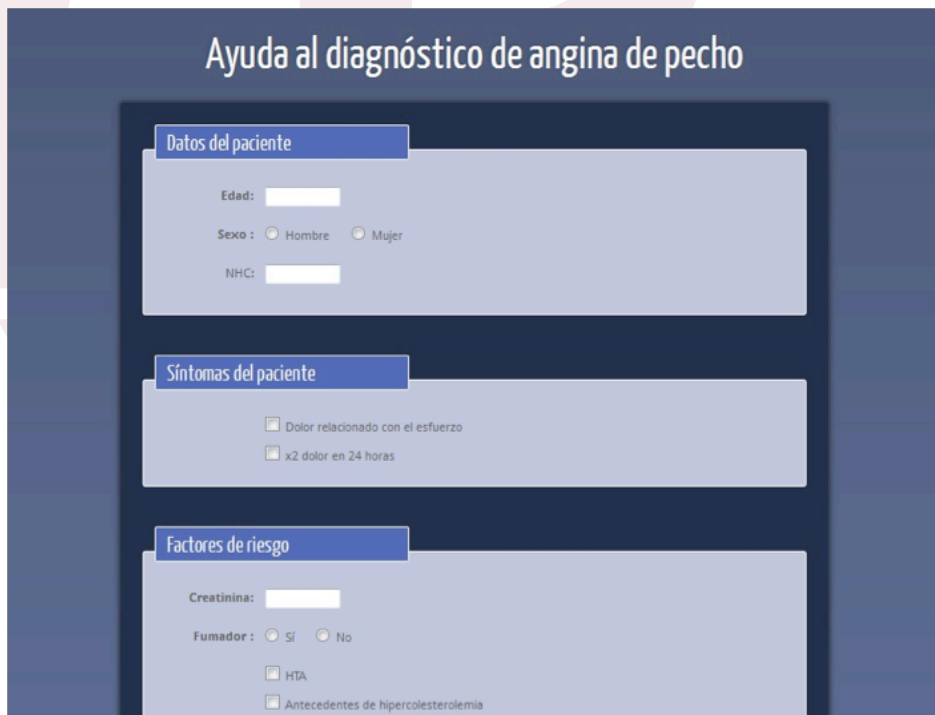
INTELLECTUAL PROPERTY RIGHTS

The technology is protected by intellectual property rights that apply to software.

COLLABORATION SOUGHT

- License agreement, manufacturing or marketing.
- R & D project to complete the development or apply to other sectors

RELATED IMAGES



The screenshot shows a web application titled "Ayuda al diagnóstico de angina de pecho". It is divided into three sections:

- Datos del paciente:** Includes input fields for "Edad:", "Sexo:" (with radio buttons for "Hombre" and "Mujer"), and "NHC:".
- Síntomas del paciente:** Includes checkboxes for "Dolor relacionado con el esfuerzo" and "x2 dolor en 24 horas".
- Factores de riesgo:** Includes input fields for "Creatinina:", "Fumador:" (with radio buttons for "Sí" and "No"), and checkboxes for "HTA" and "Antecedentes de hipercolesterolemia".

Imagen 1: Aplicación web de la herramienta HADA

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