Intervention based on Mobile Technology for Asthma Control and Healthy Lifestyle Habits Promotion in Asthma Patients with Obesity

David José SÁNCHEZ-PARDO, Jesús MORENO-CONDE, Francisco JÓDAR-SÁNCHEZ, Carmen SEGURA-SANCHEZ, Alberto MORENO-CONDE, Elena LECHUGA-RODRÍGUEZ, Ana Mª MORALES PEÑA, Tomás MARTÍNEZ HERNÁNDEZ and Pedro GUARDIA-MARTINEZ

Allergology Unit, Virgen Macarena-Virgen del Rocío University Hospitals
Technological R&D Group, Virgen Macarena-Virgen del Rocío University Hospitals

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In recent years, researchers have described an increasing prevalence of asthma and obesity (BMI $\geq 25$-30 Kg/m$^2$), being both serious public health problems. The parallel increase in these two entities, especially for females, has led to postulate that both could be somehow related. This relationship is based on evidence that obesity is a risk factor for asthma incidence.

Although different studies evidenced the increased prevalence of asthma in obese population, it is not clear if obesity is a risk factor for development of asthma or it is the opposite. Multiple studies show that weight loss improve asthma, it can reduce prevalence and reduce clinical implications but still are needed additional studies to provide an integral care of these patients to analyse improvements in pulmonar function, their importance in asthma disease control and impact on consumption of healthcare resources.

The popularity of the new generation of smart mobile phone sets a new channel design aimed at encouraging patients in self-management and treatment adherence interventions. The experiences in implementing mobile applications in asthma show promising results since there are experiences in which the patients could improve asthma control and increase their capacities for self-management of the disease.

This project proposes an organizational innovation based on incorporating mobile technologies to address the problem of the increased prevalence of asthma and obesity. In order to achieve it, we designed an interoperable infrastructure following the principles of Service Oriented Architecture to allow the reusability of services and scalability. This infrastructure is based on interoperability profiles provided by IHE for document management to obtain a federated infrastructure were new systems could be integrated in the future, as well as, allows the management of documents produced by those existing systems. Moreover, within this infrastructure the information will be structured according to ISO 13606 standard for Electronic Health Record (EHR) communication that will allow the communication between mobiles and EHR systems.
A reliable environment for sharing clinical information between the multiple healthcare providers involved and patients, that will be complemented with the definition of reminders, alerts and relevant information about the patient conditions, is expected to provide a scenario that allows the increased control of the patient health condition. In order to evaluate this intervention, it is proposed to perform clinical study with 110 patients (aged >18 years) with 12 months follow up that allows to evaluate quality of life (AQLQ, Asthma Quality of Life Questionnaire), effectiveness and efficiency of a pioneer healthcare model based on two pathologies with high prevalence making possible controlling two interdependent diseases with an integral intervention. Patients were randomly assigned to one of the groups: Intervention group: asthmatic patients with overweight / obesity receiving an intervention based on mobile technology for asthma control and promotion of healthy lifestyles. Control group: asthmatic patients with overweight / obesity receiving conventional medical care. The data were entered, coded and analyzed using SPSS version 20.

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