E-OncoHealth: telemedicine program for monitoring onco-hematological outpatients

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Keywords. Ambulatory care, antineoplastic agent, mobile applications, personal autonomy

Introduction

Numerous novel oral antineoplasic agents (OAA) have been approved over the past few years. They are considered to be high risk drugs and since their commercialization, numerous medication errors have been detected. Consequently, new challenges regarding their monitorization, possible drug interactions and patient´s adherence have arisen. The information and communication technologies, especially 2.0 platforms, are revolutionary tools that can help to improve the pharmacotherapeutical management of chronic patients and favour their autonomy.

1. Methods

The aim of this project is to design, implement and evaluate a 2.0 comprehensive e-heath program (e-OncoHealth) in onco-hematological outpatients treated with OAA in order to increase the treatment safety and efficiency and improve the patient´s quality of life. A multidisciplinary team (pharmacists, doctors, nurses and informatics) from two Spanish Teaching Hospitals was created. A state of the art review on informatics medical applications and their developers was carried out in order to choose an appropriate company that could help with the project. Literature on crucial steps in the pharmacotherapeutic follow-up of onco-hematological outpatients was also reviewed. In several meetings the multidisciplinary team set the app and platform characteristics' and software, discussed the economical proposal and distributed the development tasks and responsibilities.

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2. Results

The E-OncoHealth platform includes a mobile phone application to be installed on the patient's own smartphone, and a free-access website. The platform contents are organized in the following sections:

- "Medication schedule": daily regimen of OAA and other chronic drugs. Patient's medication list will be introduced by a healthcare professional, though patients can add any new treatment afterwards. This section contains information on each drug (e.g. drug administration, drug interactions and most common adverse events). It also includes a medication reminder alarm system.
- "Self-care": in this section, the patient can record the drug administration (this information will allow healthcare professionals to assess the adherence rate), his/her quality of life, weight and blood pressure. Patient´s can also register any adverse events (AE) they experience during their treatment. The reported AE will be graded following CTCAE version 4.01 and accordingly, a pre-designed algorithm will give them advises on how to best proceed.
- "Health education": information about healthy lifestyle, hygiene, food, proper waste management and interesting website links are included in this area.
- "Calendar": physician/pharmacist appointments can be registered and patients can set several reminder alarms.
- "Messages": patients can type messages to pharmacists, allowing a bidirectional communication.

All collected data is automatically sent to the website so that pharmacists can do real-time follow-up of the patients. An automatic message is also sent to the pharmacist when the patient adds a new drug to the "Medication schedule", reports an AE or does not take the OAA.

3. Discussion

The designed E-OncoHealth platform will likely improve patient's medication management. Currently, an interventional quasiexperimental pre-post study is being conducted to assess whether the platform can increase safety, efficiency and quality of life in onco-hematological outpatients.