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The importance of educating subjects entitled to use an adrenaline auto-injector for self-administration

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KEY WORDS

Anaphylaxis; adrenaline; compliance to treatment

Summary

An educational program, consisting in a clear explanation of the technical aspects and use of the adrenaline auto-injection devices (AAD) and in a practical test utilizing a demonstration kit was given to 350 patients from our outpatient clinic. AAD was also distributed to 50 patients formerly followed by another allergy clinic without training. At practical control test, only 10% of the untrained patients were able to correctly use the AAD versus 80% of trained subjects. Since AAD is a life-saving procedure in severe anaphylactic episodes, this attempt to improve the ability of the patient to comply with the procedure can improve the efficacy of the treatment and eventually the patient's health.

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Following a treatment strictly has always represented a problem in medicine. A gap in the compliance of the treatment in chronic illnesses could lead on the one hand to several problems for patients to face, and on the other hand it could spoil medical resources, but more importantly in emergency cases it could become life threatening.

The World Allergy Organization Guidelines for the Assessment and Management of Anaphylaxis stated in a recent revision (1) that in spite of the lack of controlled clinical trials, the first therapeutic attempt should be adrenaline intramuscular injections (2). This procedure can stop the progression of the anaphylactic shock (3), that could in a matter of minutes lead to death especially in more fragile subjects, such as elderly patients, pregnant women, newborns or patients affected by cardiovascular comorbidity or following beta-blockers therapies (4). The life-saving role of adrenaline administration makes it a milestone of treatment of severe acute allergic reactions, and led the Italian national drug reg-

ulatory organism to include the adrenaline auto-injection devices (AAD) for self-administration in the free of charge therapeutic tools for allergologist selected patients. Moreover, the evaluation strategy formerly confined to symptom driven selection, has been extended to an evaluation of the specific antigen intrinsic hazard (5) increasing the AAD prescriptions.

This is why we have implemented a patient-information-program for those eligible for adrenaline auto-injection devices (AAD) for self-administration (6). The main goal of the program is to teach them how to face the two main obstacles in adrenalin auto-injections: first of all the complications directly connected to the use of the AAD device (7), and then the accuracy in detecting the auto-injection proper correct time. Moreover, it is worth mentioning that a correct information reduces the risk of an accidental injection (8).

Our educational program consists in a clear explanation of the technical aspects and use of the AAD device with particular

emphasis on the timing, followed by a practical test utilizing a demonstration kit that is given to the patient along with the AAD device, test which is repeated annually.

In the last two years, in our outpatients clinic after a careful evaluation we selected 350 patients to receive the AAD device; an educational program together with an ample encouragement and a strengthening of motivations was provided to each selected patient; moreover, in the last year we have also admitted to our outpatient clinic 50 patients formerly followed by another allergy clinic from a nearby town where, after a scrupulous selection, the AAD device was given without a formal information program leaving the patients to deduce such information from the written instructions contained in the AAD device package. All these newcomers underwent a practical test with the demonstration kit, and we observed that only 10% were actually able to use the AAD device correctly versus 80% of our patients to whom we had offered the direct verbal educational trial.

Moreover, only 25% of our historical patients versus 68% of the newcomers were not aware of the expiration date of the device, leaving them to face consequent risks of using a spoiled and ineffective drug with potentially lethal consequences, a data which was reported as high as 54% in other studies (9).

The main obstacles we observed were on the one hand the incapability of the patients to accept the gravity and possible lethal harm of the disease itself, and on the other hand the fear of the procedure and its potential side effects.

These aspects are in line with previous observations reporting that besides the technical difficulties due to different auto-injection devices, complex emotional and behavioural factors from patients and their relatives come into play and do play a crucial role (10,11).

In order to optimize the result we believe that the AAD prescription must be accompanied by a complete and comprehensive information, and proper motivation; the yearly proposal of the educational test adds an useful feedback for the doctor to a boost of patient's knowledge. This observation could be useful to all allergists who have to evaluate and give AAD devices, and as far as we are concerned it has prompted us to substantiate the educational program on the topic with the attempt to improve the ability of the patient to comply with the procedure and strengthen the efficacy of our treatments in such a delicate matter.

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