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LETTER TO THE EDITOR/EDİTÖRE MEKTUP

The Importance of Patients Regularly and Visually Checking Their Epinephrine Auto-Injectors

Hastaların Epinefrin Otoenjektörlerini Düzenli ve Görsel Olarak Kontrol Etmelerinin Önemi

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To The Editor

Intramuscular (i.m.) epinephrine is the first line treatment of an anaphylactic reaction, irrespective of its cause. Its immediate administration is of paramount importance (1-6). Patients susceptible to anaphylaxis are therefore highly recommended to carry epinephrine-containing auto-injectors.

With those patients, we discuss at every visit the indication and usage of their auto-injector, demonstrate its correct use using a trainer device, and then observe the patient doing the same. In accordance with the Prescribing Information of every FDA-approved and commercially available epinephrine auto-injector (7-9), we encourage our patients to check the expiration date of their auto-injector and visually inspect the color and appearance of the solution through the viewing window.

However, despite these precautions and the education of our patients, a recent event in our clinic demonstrated that situations can arise where an epinephrine auto-injector needed for an emergency situation will not work due to prior tampering.

Therefore, we recommend that physicians instruct their patients to perform regular, and product-specific visual checks of the auto-injector itself.

To our knowledge, no reports have been published on the importance of autoinjector-specific visual checking for prior usage/tampering.

A 12-year-old female with a several-year history of perennial allergic rhinitis with seasonal worsening was evaluated at our clinic. She was diagnosed with allergic rhinitis with sensitivity against several indoor and outdoor allergens, and she was recommended allergen avoidance measures, pharmacotherapy, and allergen immunotherapy.

She was progressing in a satisfactory manner on allergen immunotherapy. However, upon receiving the 0.2 cc dose from the Red vials, she developed nasal congestion, coughing, chest tightness, wheezing, and generalized urticaria within 30 minutes. Since she only waited 20 minutes in the office after receiving her injections, the reaction started just as she and her mother arrived home. Her mother immediately attempted to administer i.m.

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epinephrine by using the patient's Epipen, which on that day the family had accidentally left at home. Upon picking up the carrier tubes with their respective autoinjectors inside, she immediately noticed that they looked different than we she obtained them from the pharmacy, in that the orange needle protectors were fully extended, and therefore the Epipen auto-injectors no longer fit in their carrier tubes. She still attempted to use the autoinjector, but according to her, it did not "fire". She then attempted to use the other Epipen auto-injector, which also failed to work. At this point she believed that both Epipen auto-injectors had been "tampered with".

Instead of calling us or returning to our clinic, they decided to drive to the nearest emergency department, where they received treatment.

After talking to both parents on the phone, and hearing that they believed that the Epipen auto-injectors have been tampered with, we requested that they bring in both devices for examination. Upon inspecting the Epipen auto-injectors, it was obvious that both had already been used. Just as the parents described, the orange needle protectors were fully extended, and the Epipen auto-injectors no longer fit in their carrier tubes.

They also informed us that the auto-injectors were always kept on a desk in the patient's bedroom. We found out that a few days prior to the above-described reaction that there was a sleepover in the patient's room. Therefore, our consensus was that most likely one of the children staying there played with the auto-injectors. The family decided against asking the individual children who stayed overnight, for fear of upsetting them and/or their parents.

We believe, that this event clearly demonstrates the paramount importance of teaching our patients how to determine whether or not their auto-injectors have been tampered with, rendering them unusable. Performing regular visual examination of their auto-injectors before they are needed in an emergency, can be a lifesaving action.

Currently, three epinephrine auto-injectors are used routinely in the United States: Epipen®, Auvi-Q®, and generic Adrenaclick®. Because of their unique designs, the ways of checking whether they have been used are fundamentally different.

Epipen®

If the orange needle guard is fully extended, the auto-injector no longer fits into its carrier tube and therefore the cap on the carrier tube does not close, the auto-injector has been used, and will not work again.

Auvi Q®

The auto injector has been used when, upon removal from its case, the LED blinks and the voice prompt says "This device has been used and should be taken to your physician for proper disposal and a prescription refill".

If the device has not been used, the following voice prompt will be heard: "If you are ready to use, pull off red safety guard".

Generic Adrenaclick®

If the generic Adrenaclick® fits in its carrying case, the red tip (needle end) is not visible, and both blue end caps are firmly in place upon removal of the device from its case, the device has not been used.

If the generic Adrenaclick® has its red tip visible and a needle protruding from it, it has been used, and will not work again.

The above information has been verified with the appropriate medical information departments of the respective epinephrine auto-injector manufacturers (Mylan, Kaléo and Impax).

We believe that patients regularly and visually checking their epinephrine auto-injectors will avoid situations where use of an urgently needed epinephrine injection is impossible due to defective, tampered with, or previously used injectors.

The burden of training our patients on auto-injector use lies with us, the physicians. Also, since insurance coverage can change, our patients might receive a different device. Therefore, keeping that training up to date and product specific is of paramount importance.

While patients and/or their caregivers should continue to perform the FDA-approved recommendations of periodically visually inspecting the epinephrine solution for particulate matter and discoloration, as well as checking the expiration date (7-9), relying on these alone could prevent the recognition of a tampered/used auto-injector in the event of an anaphylactic reaction.

The above-described case also underlines the importance of keeping the epinephrine auto-injectors not just in an easily accessible, but secure place. It is particularly important to educate children about the importance of not playing with the auto-injectors, and the difference between the demonstration (trainer) device and the actual epinephrine-containing auto-injector.

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