Patient and caregiver reported problems in the utilisation of epinephrine auto-injectors for management of severe allergic reactions

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Aims: A prospective, web-based study was conducted to understand causes for utilization problems of epinephrine auto-injectors (EAIs) among patients and caregivers of patients with anaphylaxis.

Methods: 505 patients aged 18-65 years (mean=30.4; 26.1% male) and 448 caregivers of individuals under aged 18 years (mean=24.4; 33.3% male) were recruited in the United States. All participants had been prescribed an EAI for self-administration or for administration by a caregiver. The survey took place between the 15th and 30th of November, 2015.

Results: The most common administration problems included: EAI was pressed too firmly against the skin (11.1%), needle was bent during injection (7.4%), and did not allow enough time for the injection to complete (8.7%). When asked to identify factors contributing to the cause of injection problems, caregivers were more likely to attribute problems to improper training (p=0.01), lack of understanding on how to use the EAI after training (p=0.03), and difficulty in use (p=0.003) as compared to patients. Only 16.4% of all participants reporting a problem immediately realized there was an issue with the EAI injection while 6.0% of participants realized the EAI did not work properly upon the worsening of symptoms.

Discussion: Results indicate that the causes of injection problems were similar among patients and caregivers. The findings call into question the efficacy of current educational programs and safety information delivered to patients and caregivers regarding the use of EAIs to treat anaphylaxis.

Conclusions: Education of patients and caregivers about current anaphylaxis treatment guidelines and the safety and easy use of an EAI that is directed at health care professionals may not be working well. Reasons for non-adherence to anaphylaxis treatment guidelines should be further assessed in future studies.