

Exploring the Potential for Further Research into Novel Approaches in the Treatment of Food Allergy

Acute allergic reactions to food are increasingly common.^{1,2} In the UK, admissions for food-related anaphylaxis have increased by 5.7% annually from 1998 to 2018, reaching 4.04 per 100,000 population per year. A total of 152 deaths during that time were caused by fatal food anaphylaxis. Current treatment for food allergy centers on avoidance of the allergen, modification of the acute immune response with antihistamine drugs, and self-administration of adrenaline with urgent attendance at the emergency department in case of anaphylaxis.³ In both the UK and USA, only one treatment is licensed for the treatment of the underlying condition, and this is solely for the treatment of peanut allergy with about 50% of those treated showing a substantial benefit.⁴

A recent review article has described the treatment options for allergies currently in development. These include further development of immunotherapy, the use of monoclonal antibody therapy and the use of microbiome-modulating agents.⁵ These newer therapies are in various stages of development and significant further clinical research is required to demonstrate effectiveness, including testing with specific allergens. Alongside this emerging body of research, there is a need for further investigation into experimental approaches currently being used for the treatment of allergies. This includes elucidation of the two-way conversation between our body and our brain, which forms the basis for psychological interventions to treat allergic reactions. This overview provides brief insight into possible psychological interventions that could form a basis for future research.

One psychological intervention used in allergy management, 'The Fast Allergy Cure', utilises the method from 'Beliefs: Pathways to Health and Well-Being' by Dilts *et al.*⁶ 'The Fast Allergy Cure' is based on a modified version of 'The Fast Phobia Cure,' as previously used successfully for phobias and first described by Bandler.⁷ The treatment is only suitable when the patient knows the allergen causing their symptoms (and where there is no previous evidence of Type-1 hypersensitivity or anaphylaxis), and in such cases, Dilts reports a series of patients who experienced resolution of their allergic reactions without side effects. The empirical method for this treatment is briefly described in **Figure 1**. The possible underlying mechanisms underpinning such psychological interventions are based on evidence of interactions between our immune and nervous systems.⁸

Figure 1: Treatment process for red wine allergy (as an example)

1. Identify allergen
2. Induce mild hypnotic state (breathing exercise, etc.)
3. Patient imagines drinking red wine, therapist calibrates this as negative reaction set
4. Patient imagines drinking a similar substance that is safe with the therapist anchoring this reaction with touch and calibrating a positive reaction set
5. Patient imagines image of themselves seated on the other side of the room behind a plate of glass
6. Patient envisages their image drinking the red wine with a positive reaction set and therapist checks this is now a positive reaction set, anchoring with touch
7. Keeping the anchor, the patient is then guided to remove the plate glass and reintegrate the image with themselves
8. Patient now imagines drinking red wine and therapist checks for positive acceptance set with process repeated if necessary to achieve good positive acceptance set
9. Hypnosis to strengthen effect



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Although the aforementioned techniques draw on existing knowledge base of the close interaction between our central and peripheral systems, due to the current paucity in clinical trials determining safety and efficacy as well as mechanistic studies, wider implementation in clinical practice remains limited. Therefore, whilst substantial further evidence is required to establish the credibility of these treatment strategies, we seek to stimulate further high-quality clinical research in this area through brief insight and discussion of two mini case examples from a wider series of cases managed by 'The Fast Allergy Cure' team.

Mini case examples

Informed consent was obtained to report the following cases of patients treated by Dominic Beirne (DB) in England.

Mini case example 1: JB

JB, a 34-year-old white British female nurse, had an allergy to tomatoes. On eating tomatoes her tongue would swell up to twice its normal size and her breathing would become shallow. The symptoms could last for up to an hour. DB treated her with the Fast Allergy Cure which took about 25 mins. This was the only treatment session. Although advised to test the treatment carefully with appropriate medical supervision, JB ate a cheese and tomato sandwich shortly after treatment. She experienced no allergic reaction. When reviewed 11 months after treatment she was still able to eat tomatoes.

Mini case example 2: MB

MB was a 61-year-old lady allergic to red wine. She would develop an itchy red blotchy rash on her chest, neck, and face with red wine. This would usually occur after two glasses or more and last for a few hours. She consulted DB who explained the Fast Allergy Cure process and then ran it with her in a single session. She was reviewed 8 weeks later. She reported that she had drunk red wine on several occasions with no reaction.

Discussion

The earliest known example of a purely psychologically induced allergic reaction in the medical literature is a case report from 1886.⁹ This describes a severe immediate allergic response induced solely by a model of a rose in a woman with severe rose allergy. This demonstrated that a visual stimulus could produce an IgE mediated allergic reaction in the absence of the allergen.

The effect of psychological conditioning of the immune response has been studied further and a recent review article by Elkhatib, Ross and Case¹⁰ has outlined our current knowledge of the close relationship between the immune system and the nervous system. This includes the observation that sympathetic nerve fibres have functionally significant anatomical connections to immune cells and that immune cells respond directly to neurotransmitters.¹¹ The article also cites the evidence that the immune system produces cytokines affecting afferent nerves.¹² There is also evidence that immune cells, particularly T lymphocytes, can synthesise and degrade neurotransmitters suggesting the ability for both autocrine and paracrine signalling from these cells.¹³ It is, therefore, possible to construct a hypothesis around the potential mechanism for the rose reaction and postulate that in certain cases a psychological intervention may modulate an allergic response.

As highlighted by the mini case examples, 'The Fast Allergy Cure' may have future application potential in food allergy management. However, it is also clear that robust clinical research in this area is currently lacking and as a result, there is currently limited clinical experience of this novel treatment. In addition to further research in the field robust guideline and standards are also required for this type of intervention, including the benchmarking and regulation of practitioners who are skilled and effective in administering psychological interventions in food allergy management.

Conclusion

Whilst there is emerging evidence for the use of psychological interventions in the management of food allergy, the lack of precisely defined causal explanations are currently a limitation in adoption for wider clinical practice. It would thus be prudent to design appropriately risk-managed randomised controlled trials to establish safety and efficacy, as well as compare effects of 'The Fast Allergy Cure' with current available treatment options in the management of allergic reactions to food substances. Such research would be further supported by mechanistic studies to further elucidate causal pathways. Finally, implementation research would also be needed to understand and navigate the perceptions of both patients and practitioners. We conclude that there is a clear call to action for further well-designed clinical research into this novel modality, to promote an evidence-informed approach to broadening the existing toolkit for food allergy management.

NNEdPro Disclaimer: Interventions such as 'The Fast Allergy Cure' are currently delivered by regulated healthcare professionals, such as clinical psychologists and psychotherapists, with specific training in using psychological therapies in the management of food allergies and phobias. We also fully recognise that food allergies and phobias are separate clinical phenomena and not to be conflated. In commissioning this article, we intend to encourage further clinical research in this novel area to elucidate the evidence base for such therapies. We do not make any recommendation regarding the application of this novel treatment modality ahead of further peer-reviewed research and clinical consensus in the field.

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