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The Role of Community Nurse In Oral Food Desensitization Therapeutic Protocol In Pediatric Patients

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Abstract

Food allergy (FA) represents a common condition in the pediatric age, whose treatment involves the strict exclusion of food allergen. Oral desensitization for food (DOPA) seems to a be promising therapeutic strategy to treat persistent form of FA. Unfortunately, the efficacy and safety profile of DOPA are still largely undefined and there is an unmet need for standardized protocols.

Given the operational and psychological complexity of the procedure, the integration of a community nurse could bring considerable support to both the medical team and the patient/caregiver. The activity of the community nurse, associated with telemedicine interventions, could become a fundamental operational and training moment, especially for the phases of food desensitization carried out at home.

Nursing management should have an essential role for the assessment of methods of food intake and preparation, technical assistance in the preparation and use of drugs, education of the patient/caregiver in the early recognition of any adverse reactions, analyzing and monitoring of the quality of life of the patient/caregiver and finally to draw up a nursing report. The compilation of this nursing report has the dual purpose of guiding the patient by promoting compliance with the therapeutic strategy, and at the same time improving the traceability of the therapy and the sharing of information with the reference center. This conduct would involve the drafting of safe and personalized therapeutic protocols, to improve the quality of life of the child and the family with FA.

Keywords: food allergy, children, anaphylaxis, pediatric patients, adrenalin

Introduction

Food allergy (FA) represents a major health problem for the pediatric age, especially in the early years of life, and we notice a slow and steady increase in every age group and social context **[1]**. As is well known, FA to milk protein, the first food eaten by the infant, together with eczema represent the 'beginning of the atopic march", serving both as a prognostic factor of the development of allergies to inhalants in later life and as a marker of risk of developing severe asthma in the child/adolescent **[2]**.

Regardless of the prognostic value, FA has an aspect of considerable importance on the quality of life of the child and his family, with sometimes devastating health, psychological, and social consequences **[3]**. This happens not only because of the presence of symptoms, sometimes devastating, but also because for the "therapeutic" aspect: elimination diets may represent a good and effective approach for those transient sensitizations, which may resolve within a few years, but they certainly do not represent the gold standard in treating severe e/o persistent spectra **[4]**.

This results in psychological attitudes of:

-depression and anxiety over both the imminent risk of severe anaphylactic reactions and the risk of accidental intake of the offending food;

-careful and spasmodic reading of food labels, sometimes resulting in serious disturbances with food **[5,6,7]**.

These considerations over the years have stimulated the efforts of clinicians and researchers to experiment with new prophylaxis strategies and alternative therapies to the exclusion diet.

In this regard, a new therapeutic strategy has been developed in recent years: oral food desensitization (DOPA) **[8]**. This strategy, although approved by the European Academy of Allergy and Clinical Immunology (EAACI), is still in the experimental phase and is the subject of numerous national and international studies to define standardized protocols both in doses and in the way it is conducted and in the definition of eligible patients **[9]**.

In addition, its safety and efficacy profiles, especially in the long term, have yet to be defined; the results obtained so far have been promising and encouraging and derive mainly from studies conducted on pediatric populations with IgE-mediated cow's milk, hen's egg, and peanut allergy **[10,11,12]**.

Less frequently were other elements such as kiwi, wheat, celery, and fish **[13]**.

Similarly, to AIT (specific allergen desensitization), DOPA interferes with the natural course of allergies: with the regular and controlled intake of the specific allergen, the immune system is stimulated to develop a real tolerance, which we hope will be definitive **[14]**.

The patients eligible for this new therapeutic strategy, according to the EAACI guidelines, are those with persistent forms of allergy to cow's milk protein, egg and peanut proteins starting from 4-5 years of age, without reference to the severity of symptoms **[12]**.

The scientific community is divided between those who choose to treat only patients with moderate or moderate-severe allergy to reduce the risk of anaphylaxis, and between those who support the opportunity to also include patients with a history of anaphylaxis, with the aim of being able to free them from the obsession with the accidental ingestion of the allergen and the relative dependence on adrenaline **[15]**.

The protocols on the modalities, timing and doses of the allergenic substance are quite heterogeneous and, in most cases, provide that all the phases of gradual increase in the ingested dose take place in the hospital setting, while the remaining maintenance phases can be carried out at home.

However, there is a certain degree of variability dictated not only by clinical or personal assessments, but also and above all by the level and type of local organization of the Reference Specialist Center, which must have experienced and qualified personnel able to manage the possibility of adverse events of any magnitude **[16]**.

Despite the numerous positive aspects of this therapeutic strategy, we must not underestimate the aspect that it can easily induce adverse reactions of varying degrees, up to real anaphylactic shock in the most reactive patients **[17,18]**.

Role of the Community Nurse

The community nurse is a health professional who recognizes and seeks to mobilize resources within communities, including the skills, knowledge and time of individuals, groups and community organizations for the promotion of health and well-being in the community.

Unlike other health professions, the community nurse is not a technical figure because his intervention does not end with the service provided in the face of a need, but acts in a preventive, proactive and participatory way with respect to the patient and also to his family so that they are able to understand their situation and face it according to

For this purpose, it is recommended, before starting therapy, to collect the informed consent of the patient/caregiver and this information must contain and clearly explain all the steps, phases and procedures of the therapy, the risks, and possible benefits of the same, as well as the responsibility of the patient and the family in the home management of the therapy.

But written information is not enough, we all know how effective and empathic communication and building a relationship of trust and understanding between doctor and patient/family/caregiver represent essential elements in medical practice. These aspects appear to be of vital importance for the correct continuation of the DOPA therapeutic path, which requires a constant commitment on the part of the family members and whose outcome is strictly dependent on the understanding and behavior of family members during the long phases of home management **[12]**.

To all this we must add the not remote possibility that adverse reactions occur during the therapeutic protocol **[20]**. All these aspects mentioned above could in some way represent a reason for refusal for the patient/caregiver in undertaking or continuing this therapeutic strategy. All this would lead to the failure of the primary objective, that is to guarantee the child and the family the possibility of being able to live their allergy with greater safety and serenity, to free themselves from the obsession of the insidious allergen and from the dependence on life-saving drugs, such as adrenaline.

Only a close and close collaboration between the Specialist Center and the patients can guarantee constant attention to the problem and the resolution of any problems, allowing a continuation of the therapeutic strategy in full respect of the patient **[21]**.

In this perspective, one could hypothesize the intervention of a specialized and dedicated local nursing figure, capable of supporting the child/caregiver in periods of non-hospitalization and of reinforcing the entire organizational path at the basis of this long path of desensitization.

The Health 21 document of the WHO European Region of 1998 introduces the figure of the Family and Community Nurse (IFeC) at the basis of health care, as the first point of contact between people and health services, for integrated health **[22]**.

the parameters necessary for assistance and health protection, but also from a social and integration point of view for a better quality of life.

The community nurse would take on the role of:

- Educator of the patient / caregiver to consult / use the action plan: a handbook on information on the conduct of the home therapy protocol and indications on the management of any adverse reactions that may occur.
- Drafting of reports with detailed information on the patient subjected to the protocol.

A moment of fundamental importance prior to taking charge of the patient will be the training of the community nurse who will take

place at the specialist reference center where he will receive precise information on the planning and management of the DOPA, methods and quantities of food preparation and administration. to be introduced and finally to recognize and promptly treat any adverse reactions that may occur.

This sharing makes the HUB and SPOKE organizational network active and participatory, including the local emergency room.

Taking charge of the patient is based on a basic interview with the caregiver/ child, in which any logistical and operational difficulties, lifestyle habits and individual preferences are listed in order to be able to model a therapeutic path by optimizing times, methods and places.

After understanding and educating the patient/caregiver, the work of the community nurse continues with pre-established home appointments in which the patient/caregiver is supported in consulting and implementing the action plan, clarifying any doubts, and solving problems where they arise; another task of the community nurse is to periodically check the parent's ability to cope with emergency situations and check the integrity of the emergency kit made available to them.

Further interviews with the nurse and the child could continue using telemedicine systems.

As previously stated, correct information and education of the patient/caregiver represent a moment, albeit laborious, of extreme importance as they stimulate an inclusive, adaptive and collaborative attachment to the therapeutic path. A useful tool in order to verify the progress of the therapeutic strategy would be to draw up a self-evaluation quiz on the patient's quality of life.

Therefore, it is clear how important the figure of the community nurse is in the management of this therapeutic path, becoming a fundamental link of cohesion between the specialist doctor and the patient, offering adequate sanitation intervention and support in the moment of discouragement.

The Nursing Report

The report prepared by the community nurse should contain:

- assessment of the general state, including both the state of health and the psychological and emotional state of the patient and caregiver.
- identification of attitudes of overestimation or underestimation of the risk of any adverse reactions that could arise during the procedure.
- -superficiality in the evaluation of any symptoms.
- -evaluate the presence of environmental cofactors potentially triggering reactions and hygiene measures in the preparation of the food both as regards the methods and the doses of the allergen to be taken.
- careful monitoring of minor adverse events, especially paying attention to gastrointestinal symptoms, as some studies have shown a correlation with the development of eosinophilic esophagitis **[23]**.

The report, if compiled slavishly by the community nurse, represents a useful and important tool both for the family pediatrician and for the allergist of the reference center in order to have a global and objective vision on the progress of home desensitization and being able to modulate the protocol both on the modalities and on the timing, creating a personalized therapy (**Tables 1-2**).

Table 1: Draft paper

Date	
Food	
Center of Reference	
Dott	
Nurse	
T.N HOSPITAL	
T.N NURSE	
Symptoms	

ANAGRAFICS	DATE
Name	
Age	
Principal allergen	
Others allergen	
Free diet	
family reference	

Legend: the constant improvement of the strategy would allow a reinforcement of the spontaneous adhesion of the protocol and would "reward" the commitment made by patients and families. The close collaboration between doctor-nurse and patient / caregiver represents a fundamental support to overcome any anxieties and concerns that over time could lead to the abandonment of the protocol and the consequent interruption of the DOPA; moreover, it would allow patients with more serious disorders to reach a desensitization threshold sufficient to protect them from possible anaphylactic shock, due to accidental ingestion of the allergen.

Table 2: Periodic report

DATE	
Actual Age	
Status	
School	
Party/Other	
School Canteen	
Administration Dose	
Data	
Food Quantity	**Hours Premedication**
Observation	
Shock Gastrointestinal	Respiration Skin
Therapy	
Csi Adrenaline	Saba Cso Others
Psychological Aspects Of The Patient	
Anxiety (1-10) Attention (1-10)	Collaboration (1-10) Others (1-10)
Psychological Aspects Of The Caregiver	
Anxiety (1-10) Attention (1-10)	Collaboration (1-10) Others (1-10)

Legend: from what has been previously stated, we can assert that the management of the community nurse within the complex organizational network of this therapeutic strategy, as well as assisting the patient / caregiver, creating, and strengthening responsibility in the patient / caregiver, would also lead to considerable savings in term. of hospitalizations and resource management. A further objective would be to increase the enlist able population, as the entire management and organization procedure would be constantly and rigorously followed and supported by the figure of the community nurse, making it possible to enroll even patients with more severe disease spectra and / or those with poor therapeutic compliance.

Discussion

The presence of community nurses within the work team represents a real "revolution" as we will see not only an increase in the volume and quality of home health services, but also new control and treatment strategies.

This conduct, in accordance with what is asserted by the WHO and by International and National Scientific Societies, would allow the creation of pathways similar to those created for diseases with a high social impact (diabetes, arterial hypertension, cardiovascular diseases), allowing a capillarization on the problem of FA.

The first movements of this strategy will be the close collaboration between the specialist branches involved in the dense network of food allergies and territorial medicine (pediatrician), through the sharing of diagnostic-therapeutic paths and the compilation of good practices, the ultimate goal of which is to achieve and maintaining an optimal quality of life for both the child with FA and the family.

Therefore the figure of the community nurse would be raised by the simple "operator", becoming instead a professional able to promote, communicate and encourage the complex relationship between specialist doctor-patient / caregiver-pediatrician.

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