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Milmed Treatment Alleviated or Abolished Allergy

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Abstract

In view of the marked levels of discomfort, pain and/or poor health induced by allergic rhinitis and related conditions, especially during seasonal proclivities, the emerging availability of novel agents, and particularly probiotics, to (a) relieve, and (b) ameliorate those expressions offers much hope to sufferers whether afflicted by seasonal or regular, chronic allergies. The patented treated-yeast, Milmed, a probiotic suspension, previously shown to possess neuroprotective and neuro restorative properties, was found to provide marked ameliorative relief against a variety of allergic reactions and asthma expressed by a moderately-sized group of twenty-one participating-patients who had reported themselves to be chronic sufferers. Following a twelve-week course of Milmed treatment, an overwhelmingly large proportion (more than 95%) of the allergy-reporting patients indicated either 'moderate' or 'marked improvement' or were adjudged' symptom-free'. Comparisons of the patients' allergy condition from before Milmed treatment to after indicated marked and significant improvements. Notably, in view of postal service vagaries that resulted in non-deliverance of Milmed, a significant correlation between post-treatment scores and missed weeks of Milmed was obtained ($r = 0.526$, $p < 0.014$). The possibility that 10- to 12-week administrations of Milmed may offer more-or-less long-lasting relief from allergic reactions and the inclusion of Milmed among the health-enhancing list of probiotic interventions ought to be examined more closely.

Keywords

Allergy; Patients; Milmed treatment; Amelioration; Frequency; Improvement; Correlation; Probiotic.

Introduction

In the developed, industrial world, about 20% of individuals are affected by allergic rhinitis, approximately 6% of these have at least one food allergy, and about 20% present atopic dermatitis at some point-in-time. The global prevalence of allergies and asthma has increased, quite exponentially, during the last decades with WHO estimating above 400 million individuals debilitated by allergic rhinitis and 300 million by asthma; furthermore, 25-32% of European populations remain affected [1]. The postulated links between these conditions [2,3] demand a mandatory integration between to induce optimal treatment benefits [4,5]. In some countries, up to 18% of people present allergy and asthma whereby the rates of many allergic diseases appear to be increasing. More than 150 million Europeans suffer from chronic allergic diseases and the current prediction is that by 2025 half of the entire EU population will be affected (EAACI, 2016). Allergies present chronic conditions implying abnormal reactions to common and generally harmless substances termed allergens, which may include aero-allergens such as dust mite, mold, tree weed and grass pollen, as well as food allergens such as milk, egg, soy, wheat, nut or fish proteins. The symptoms of allergy may include red eyes, an itchy rash, itching in the nose, roof of the mouth, throat, eyes, sneezing, a stuffy nose (congestion), a runny nose, tearing eyes, shortness of breath, or swelling. Food allergies may present with vomiting, diarrhea, respiratory symptoms or anaphylaxis immediately after ingestion of the allergen. For example, the oft-occurring allergic rhinitis is expressed by an inflammation of the nasal mucosa that is expressed in response to allergens. Allergic disorders cover hay fever (allergic rhinitis), asthma, allergic eyes (allergic conjunctivi-tis), allergic eczema, hives (urticaria), and allergic shock (also termed anaphylaxis and anaphylactic shock) [6]. Seasonal hay fever (i.e. allergic rhinitis) offers the most commonly-occurring of the allergic conditions referring to seasonal nasal symptoms that are due to pollen distributions [1]. Year round or perennial allergic rhinitis is usually due to indoor allergens, such as dust mites or molds [7], with detrimental effects in occupational contexts [8]. The symptoms commonly include runny nose, stuffy nose, sneezing, nasal itching (rubbing), itchy ears and throat and postnasal drip (throat-clearing). Allergic eyes (allergic conjunctivitis) is inflammation of the tissue layers (membranes) that cover the surface of the eyeball and the undersurface of the eyelid. The inflammation occurs as a result of an allergic reaction. Allergic eczema is an allergic rash that is usually not caused by skin contact with an allergen and features the following symptoms itching, redness, and or dryness of the skin, rash on the face, especially children and rash around the eyes, in the elbow creases, and behind the knees, especially in adults. According to one notion, the allergy may be selected from the group consisting of allergic rhinitis, mite allergy, fur allergy, seasonal allergy (also known as hay fever), food allergy; and/or wherein the symptoms caused by allergy is chosen from the group consisting of atopic dermatitis (eczema), asthma, and/or rhinitis. Alternatively, the allergy is caused by an allergen selected from the group consisting of mites, pollen, animal hair, and/or animal dander.

Treatments for expressed allergies may include: the avoidance of known allergens and the use of medications such as antihistamines and steroid hormones, and currently the increasing

usage of so-called probiotics although the evidence is limited [9,10]. These may be in the form of pills or liquid, nasal sprays, or eye-drops. Although newer generation of antihistamines has improved, people may still experience side effects, such as headache, tiredness, dizziness, dry mouth, vision changes and excitability/nervousness. Side effects of corticosteroid nasal sprays include nosebleeds, stinging in the nose and dryness of the nose, nausea and dizziness. In addition, several complementary health approaches have been studied for allergic rhinitis and there is some evidence that a few may be helpful. Probiotics (live microorganisms that may have health benefits) have been investigated for diseases of the immune system, including allergies. They constitute living non-pathogenic microorganisms that may be administered to improve microbial balance, particularly in the gastrointestinal tract, often consisting of Saccharomyces boulardii yeast or lactic acid bacteria, such as Lactobacillus and Bifidobacterium species, and as such have been regulated as dietary supplements and foods. Probiotics exert their beneficial effects through various mechanisms, including lowering intestinal pH, decreasing colonization and invasion by pathogenic organisms, and modifying the host immune response. In this regard, despite their known propensity to induce 'yeast-intolerance', yeasts are also reliably applied as probiotic entities. For example, kujigamberol (15,20-dinor-5,7,9-labdatrien-18-ol), which interferes with pro-inflammatory cytokine actions, was isolated from Kuji amber and known compounds already isolated from modern plants identified in Baltic and Dominican ambers, a prominent new anti-allergy compound, was tested in a rhinitis allergy model, yeast-induced, and was found to be about five times more potent than those of the mometasone furoate therapy, a synthetic corticosteroid which has been evaluated for intranasal use in the treatment of adults and children with allergic rhinitis [11]. Furthermore, JP 6 002 452 discloses a Saccharomyces cerevisiae yeast as useful for prevention and treatment of various immunological diseases by suppressing production of IgE causing type I allergy symptoms and JP 4 712 289 discloses a mixture of Saccharomyces and lactic acid bacteria for the prevention of food allergy. Although some studies have had promising results, the overall evidence on probiotics and allergic rhinitis is inconsistent. Under present conditions, the probiotic status of treated yeast product as a probiotic entity is considered.

The use of low-intensity electromagnetic millimeter wavelengths within non-traditional areas, such as medicine, biology and biotechnology is a trend that originated in Russia in the middle of the 1960s as a result of pioneering work made [12,13]. It has surprisingly been found that a yeast cell treated with electromagnetic waves in the range of 1 GHz to 300 GHz (a so-called treated yeast cell or treated yeast) or a yeast cell grown from a treated yeast cell are effective in the treatment and/or alleviation of allergy and/or symptoms caused by allergy. An advantage with the yeast cell according to the present disclosure is that it allows for improved and cost-effective treatment and/or alleviation of allergy and/or symptoms caused by allergy. The electromagnetic waves may be delivered with any electronic or photonic device known within the art. The electromagnetic waves may have a power density: below 1 mW/cm^2, such as about 0.1 mW/cm^2, such as between 0.004 mW/cm^2 and 0.2 mW/cm^2. The oscillation frequency may be within the range from about 35 to about 65 GHz. The electromagnetic waves may have a power density below 1 mW/cm^2, such as between 0.004 mW/cm^2 and 0.2

mW/cm^2, such as about 0.1 mW/cm^2. Thus, as stated above, a preferred EHF (extremely high frequency) treatment time is between 20 and 120 minutes.

The purpose of the present study was to examine the putative therapeutic effects of the probiotic, treated yeast product, Milmed, for the alleviation, or in optimal cases, the abolition of allergy conditions among a group of sufferers identified within a selected locality. The duration of weekly, repeated Milmed administrations was sub-chronic, over a period of ten weeks. The millimeter-wavelength treated-yeast, Milmed, that has been allocated the name, Milmed, with anti-neurodegenerative properties [14,15], was applied recently for the treatment of recurrent seasonal and animal hair allergies over eight-week twice weekly administrations.

Methods and Materials

Participants

The study included 22 individuals, with or without one extra individual of unknown response-status (see below), who agreed to participate (participating patients), aged between 19 and 88 years of age suffering from different kinds of allergic reactions. The patients were instructed to drink 100 ml of the Milmed composition each morning before partaking of their breakfasts. At the start of the study, each patient filled in a form describing their symptoms of allergy in detail. After 10 weeks, each patient was asked to evaluate their symptoms of allergy and rate, whether or not they had experienced any improvement of the symptoms of allergy. One patient responded that he was unable to evaluate the effects of Milmed upon his grass allergy during the summer months, i.e. the period of Milmed testing since during the Milmed treatment his had not experienced any symptoms whatsoever. The study was carried out during the spring and summer of 2017. None of the participants were active/full-time athletes and most of them had performed physical exercise now and then but not regularly.

Milmed Preparation

The method is comprised of the step of growing the treated yeast cells in the growth medium. The growth may be aborted at any time, when a desired cell concentration is achieved. The growth medium may wort, i.e. a tonic malt beverage is obtained from wort and yeast. Any kind of yeast may be used, although it clear too that any kind of wort may be used. Alternatively, the wort is obtained from a brewery or is made from barley malt or made from the wort concentrates. The wort may be pasteurized such as by heating it to between 70 and 75ºC for more than 30 minutes. The wort may then be stored in sealed containers up to two weeks at temperatures between 18 and 20ºC. S. cerevisiae may be revived by suspension in a small volume of sterilized 11 wt% wort. It is important that no other microorganisms contaminate the wort. The revived culture is subsequently inoculated on a number of Petri dishes with agarized wort, to obtain pure yeast culture. This may be confirmed by microscope. Prior to EHF-treatment, yeast from one of the dishes with pure culture sterile are transferred into the tube containing sterile 11 wt% wort, such as between 10 to 12 ml. The

cultures are grown until skim appears, typically at 25 to 28 ºC during 20 to 24 hours. The yeast culture is then treated in an EHF-field. This may be done by first filling sterile Petri dishes with yeast suspension. The dish is then covered and placed in an EHF-unit. Such a unit may be any unit generating electromagnetic oscillations in the EHF-range. EHF-treating time is preferably less than 60 minutes. The power density of EHF-oscillations is preferably about 0.1 mW/cm^2. The oscillation frequency is within the range of 30 to 300 GHz. The method may further comprise the step of growing the treated yeast cells in the growth medium. The growth may be aborted at any time, when a desired cell concentration is achieved. The growth medium may wort, i.e. a tonic malt beverage is obtained from wort and yeast. Any kind of yeast may be used. Any kind of wort may be used. Alternatively, the wort is obtained from a brewery or is made from barley malt or made from wort concentrates.

Milmed Delivery

It was sent via the postal service (Postnord) to each of the participant patients' address although unfortunately, due to several delivery vagaries that afflicted the study, a significant number of deliveries were never made and/or were destroyed by a lack of care.

Procedure

The questionnaire for assessing the therapeutic effects of Milmed was constructed by one of the authors (TL) through the selection and application of items from several other Swedish questionnaires designed for allergy studies. All the patient participants were instructed to complete the questionnaire prior to the delivery of Milmed. They were all informed also they should either through written responses or oral responses answer all the items again on completion of the treatment program and study. In the form of a drinkable suspension, with a taste not unlike beer, Milmed has a sustainability of about 10 days under storage in a friggidaire. Each weekly dosage of 200 ml was divided into two intakes each prior to breakfast on an empty stomach. All the participant patients received written instructions on how to administer Milmed together with the first delivery. Most of the participating patients began in taking Milmed on the 10th February 2017, although two individuals began one month later, providing a total of twelve weeks treatment from the start. At the beginning of May, 2017, another questionnaire was sent out to each of the participant patients in order to assemble the responses of each regarding how or to what extent Milmed had affected their allergic reactions. Another month was required in order to receive all the patients' responses; some preferred to respond over the telephone.

Descriptions of individual patients' allergy conditions: The result of the participating patient evaluation is shown in Table 1 below.

Patient 1: Female, 42 years old. Non-smoker. History of allergy: pollen, grass, mites, dog and cat). Tiredness, frequent colds. Nasal obstruction, sneezing, reduced ability to smell, itchy, watery and swollen eyes; heavy breathing, shortness of breath, wheezing breath, thick

mucus, chest tightness. Intake of normal dose every morning before breakfast for 8 weeks. Perceived improvement of allergic problems on scale of 1 to 10 rated as 8 out of 10; reduced need to take allergy medicine; is less tired.

Patient 2: Male, 69 years old. Non-smoker. History of allergy: fur, cats and dogs, contact/urine, 1 month. Non-genetic. Throughout the year, Throat constriction, hoarseness. Intake of normal dose from start before breakfast. Perceived improvement on scale of 1 to 10 rated as 10; no parallel medication; no colds since Milmed.

Patient 3: Male, 27 years old. Non-smoker but snuff. History of allergy: pollen/grass-seasonal-April to August inclusive, symptoms: runny-blocked nose, itchiness/pruritus, tears, redness. No childhood indications, onset 2 years previously. No treatments used. Non-genetic. Intake of normal dose from start before breakfast. Perceived improvement on scale of 1 to 10 rated as 10; no parallel medication; mild cold.

Patient 4: Female, 88 years old. Non-smoker. No childhood indications, onset 57 years previously. History of allergy: fur, cats and dogs, contact. Throughout the year, Throat constriction, hoarseness, sneezing. Use of a variety of prescribed medications against fur allergy. Non-genetic. Intake of normal dose from start before breakfast. Perceived improvement on scale of 1 to 10 rated as 10; no colds since Milmed, highly pleased with Milmed effect.

Patient 5: Male, 42 years old. Non-smoker. No childhood indications. History of allergy: pollen/grass-seasonal-April to August inclusive. Symptoms: runny-blocked nose, itchiness/pruritus, onset 11 years previously. Medication: Clarityn, nasal spray, seasonal – May, June, July. Non-genetic, medication above. Intake of normal dose from start before breakfast. Perceived improvement on scale of 1 to 10 rated as 10; no colds or illness, since Milmed.

Patient 6: Male, 49 years old Non-smoker but snuff: No childhood indications, onset 10 years previously. History of allergy: pollen/grass-seasonal-May to August inclusive, symptoms: runny-blocked nose, swelling, medication: Clarityn, nasal spray. Non-genetic. Intake of normal dose start before breakfast. Perceived improvement on scale of 1 to 10 rated as 10; no colds or illness, since Milmed.

Patient 7: Male, 41 years old. Non-smoker. No childhood indications, onset 24 years previously. History of allergy: vegetation, pollen-seasonal-April to June inclusive, symptoms: runny-blocked nose, swelling, sneezing, itchiness/pruritus. Medication: use of a variety medication against allergy. Non-genetic. Intake of normal dose start before breakfast for 11 weeks, missed 3 weeks [NB. Could have affected patient's result]. Perceived improvement on scale of 1 to 10 rated as 5 out of 10; reduced need to take allergy medicine; less asthma; more alert since Milmed.

Patient 8: Male, 42 years old. Non-smoker. No childhood indications, onset 18 years previously. History of allergy: pollen-seasonal-April to July inclusive, symptoms: runny-blocked and swelling nose, itchiness, redness and swollen eyes. Medication: use of a variety medication against allergy. Non-genetic. Intake of normal dose start before breakfast for 10 weeks, missed 2 weeks [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 8 out of 10; no parallel medications; less asthma; more alert since Milmed.

Patient 9: Male, 71 years old. Non-smoker. No childhood indications, onset 48 years previously. History of allergy: horse, pollen-seasonal-April to June inclusive, symptoms: run-ny-blocked nose, swelling, itchiness in eyes. Medication: use of a variety medication against allergy. Non-genetic. Intake of Milmed from start before breakfast for 10 weeks. Perceived improvement on scale of 1 to 10 rated as 10 out of 10; no parallel medications; more alert since Milmed.

Patient 10: Female, 51 years old. Smoker. No childhood indications, onset 30 years previously. History of allergy: pollen-seasonal-April to July inclusive, symptoms: runny-blocked nose, sneezing, swelling, itchiness in eyes. Medication: use of a variety medication against allergy. Non-genetic. Intake of normal dose from start before breakfast for 13 weeks, missed 4-5 weeks [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 8 out of 10; reduced need to take allergy medicine; increased strength and resilience, less pain in joints since Milmed highly pleased with Milmed effect.

Patient 11: Female, 34 years old. Non-smoker. No childhood indications. History of allergy: pollen-seasonal-April to July inclusive, symptoms: runny-blocked nose, swelling, itchiness in eyes. Medication: use of a variety medication against allergy. Non-genetic. Intake of normal dose from start before breakfast for 10 weeks, missed 2 weeks (NB. Could have affected result). Perceived improvement on scale of 1 to 10 rated as 7 out of 10; reduced need to take allergy medicine; more alert; better mental health. Highly pleased with Milmed effect.

Patient 12: Female, 46 years old. Non-smoker. Childhood indications; Eczema, asthma / bronchial problems, allergic rhinitis, food hypersensitivity. History of allergy: pollen, grass, dust, mites, dog, cat, horse, timothy, hazelnut, almond, apple, kiwi, peach. Throughout the year; symptoms: blocked nose, swelling, sneezing, itchiness, redness and swollen eyes; throat constrictions, cough, hoarseness, heavy breathing, shortness of breath, wheezing breath, thick mucus, pain in the chest. Medication: Pulmicort, bricanyl, omeprazole, betaproc. Genetic. Intake of normal dose start before breakfast for 8 weeks. Perceived improvement on scale of 1 to 10 rated as 8 out of 10; reduced need to take allergy medicine; more alert; better health, less illness.

Patient 13: Male, 62 years old. Non-smoker but snuff. Childhood indications; Eczema, asthma, allergic rhinitis. History of allergy: dust, cat, pollen-seasonal-April to July inclusive, symptoms: runny-blocked nose, sneezing, loss of smell, itchiness, redness and swollen eyes, hoarseness. Medication: antihypertensive. Non-genetic. Intake of from normal dose start before breakfast for 8 weeks. Perceived improvement on scale of 1 to 10 rated as 8 out of 10; no parallel medications.

Patient 14: Male, 48 years old. Non-smoker. Childhood indications; allergic rhinitis, food hypersensitivity. History of allergy: pollen, grass, dust, fur, dog, cat, horse, birch, apple, scents-seasonal-March to October inclusive, symptoms: blocked and swelling nose, sneezing, itchiness and watery eyes; itchiness, irritation and swollen oral cavity / pharynx; throat constrictions, cough, hoarseness, heavy breathing. Medication: Loratadine. Non-genetic. Intake of from normal dose start before breakfast for 8 weeks. Perceived improvement on scale of 1 to 10 rated as 6 out of 10; reduced need to take allergy medicine.

Patient 15: Female, 44 years old. Non-smoker. Non-childhood indications. History of allergy: pollen, grass, dust, mites, dog, cat, horse. Throughout the year, symptoms: blocked and swelling nose, sneezing, reduced sense of smell; itchiness, watery and swollen eyes; throat constrictions, heavy breathing, shortness of breath, wheezing breath, thick mucus, pressure on the chest. Medication; allergy medicine. Non-genetic. Intake of from normal dose start before breakfast for 8 weeks. Perceived improvement on scale of 1 to 10 rated as 8 out of 10; very reduced need to take allergy medicine; more alert; better health, less illness.

Patient 16: Male, 34 years old. Non-smoker but snuff. Childhood indications; allergic rhinitis, onset 20 years previous. Medication; Loratadine and mommox. History of allergy: pollen, grass, dust, fur, dog, cat, horse, seasonal-April to September, symptoms: blocked and swelling nose, sneezing; itchiness, watery and redness eyes. Non-genetic association. Intake of from normal dose start before breakfast for 9 weeks, missed 1 week [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 7 out of 10; no parallel allergy medication, Milmed has replaced the previous allergy medicine, highly pleased with Milmed effect.

Patient 17: Male, 29 years old. Non-smoker, but snuff. Childhood indications; allergic rhinitis. Medication; Clarityn, History of allergy: pollen, seasonal-June to July, symptoms: sneezing. Non-genetic association. Intake of normal dose from start before breakfast for 10 weeks, missed 2 weeks [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 4 out of 10; no parallel allergy medication, Milmed has replaced the previous allergy medicine.

Patient 18: Male, 34 years old. Non-smoker but snuff. Childhood indications: Eczema, asthma, allergic rhinitis, food hypersensitivity. Medication; Milmed. History of allergy: pollen, grass, dust, fur, cat, horse, hazelnut, peanuts, all nuts, apple, kiwi, peach, exotic fruits, throughout the year, symptoms: runny-blocked and swelling nose, sneezing; itchiness, watery and redness eyes. Genetic. Intake of from normal dose start before breakfast for weeks, missed 2 weeks [NB. Could have affected result]. Perceived 10 improvement on scale of 1 to 10 rated as 5 out of 10; no parallel allergy medication, Milmed has replaced the previous allergy medicine.

Patient 19: Male, 45 years old. Non-smoke but snuff. No childhood indications. History of allergy: grass-seasonal-May to June inclusive, symptoms: runny-blocked nose, itchiness in eyes. Medication: Non-genetic association. Intake of from normal dose start before breakfast for 9 weeks, missed 1 week [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 6 out of 10; Milmed has replaced the previous allergy medicine, with good effect.

Patient 20: Male, 42 years old. Non-smoke but snuff. No childhood indications. History of allergy: pollen-seasonal-May to July inclusive, symptoms: sneezing, blocked nose, red-ness and itchiness in eyes. Medication: None. Non-genetic association. Intake of normal dose from start before breakfast for 10 weeks, missed 2 weeks [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 10 out of 10; no parallel medi-cation.

Patient 21: Male, 30 years old. Non-smoker. Childhood indications: allergic rhinitis. History of allergy: grass, pollen-seasonal-April to August inclusive, symptoms: sneezing, runny nose,

itchiness and swollen eyes. Medication: None. Non-genetic association. Intake of normal dose start before breakfast for 9 weeks, missed 1 week [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 rated as 1 out of 10; parallel allergy medication.

Patient 22: Female, 19 years old. Non-smoker. Childhood indications; Asperger. History of allergy: pollen-seasonal-May to July inclusive, symptoms: sneezing, blocked and runny nose, itchiness and redness eyes. Medication: Lithium, Seroquel. Genetic association. Intake of normal dose from start before breakfast for 8 weeks, missed 2 weeks [NB. Could have affected result]. Perceived improvement on scale of 1 to 10 was rated as 10 out of 10; no parallel allergy medication; experience of being more alert.

Results

Sub-chronic, weekly administration of Milmed induced marked improvements in the allergy conditions of the participating patients as evidenced by the improvement frequency analysis (Table 1) and the before and after Milmed comparisons (Table 2).

Table 1: Frequency analysis for Milmed effects upon patient improvement from allergy, as defined by '(a) 'no improvement, (b) 'minor improvement', (c) 'moderate improvement', (d) 'marked improvement' and (e) 'symptom-free'

Score 0 to 10 (0 = no)	Number of Patients	Patient (% Frequency)	Improvement
10 = symptom free			
0	0	0%	(a) 'No improvement'
1	1	4.76%	(b) 'Minor improvement'
↕			
3			
4	5	23.81%	(c)'Moderate improvement'
↕			
6			
7	7	33.33%	(d) 'Marked improvement'
↕			
9			
10	8	38.10%	(e) 'Symptom-free'

As evident, an overwhelmingly large proportion (more than 95%) of the allergy-reporting patients indicated either 'moderate' or 'marked improvement' or were 'symptom-free' following the 12-week course of Milmed treatment.

Table 2: Means and Standard deviations of patients' scores taken before and after Milmed treatment.

	Before Milmed	After Milmed	No. of weeks without complete treatment	No. of patients without complete treatment
Mean	0	7.67* ± 2.48	1.52	0.52
STD	0	2.48 ± 0.51	0.51	0.51
*p < 0.0001, paired two-tailed t-tests				

There was also a marked and significant correlation between the Milmed treatment effects in alleviating patients' allergies and the number of patients' treatment-missed weeks (due to postal mishaps). This result implies that much of the variation in the therapeutic amelioration exerted by Milmed upon the patients' allergies may be explained by the vagaries of Milmed availability to these patients, in the present case due to the postal service.

Table 3: Pearson correlational analysis between Milmed treatment effects and number of patients' treatment-missed week.

	Treatment Result	Missed weeks of treatment
Treatment Result	*p < 0.014	0.526*
Missed weeks of treat.	0.526*	
*p < 0.01, two-tailed t-tests		

As presented in Table 1, 24 % of the 21 patients experienced a moderate improvement of their symptoms of allergy. Notably, 33% of the 21 patients participating in the evaluation experienced a clear improvement of their symptoms of allergy and as many as 38% were completely symptom free. Additionally, 11 patients out of the 21 patients receiving Milmed had reduced their intake of conventional allergy medications.

Discussion

The findings from this study of Milmed administration to a group of allergy sufferers (patients) may be summarized as follows:- (i) weekly administration of the Milmed health adjunct induced marked improvements among allergy sufferers, by which more than 95% of the sufferers expressed greater than moderate improvements and, indeed, over 38% of them were expressed as symptom-free, (ii) the comparison of patients' scores taken before and after Milmed treatment indicated a markedly lowered level of allergic reactions, and (iii) the correlational analysis indicated a strong and significant relationship between the patient treatment scores and the number of treatment-missed weeks thereby reinforcing the contention that the Milmed treatment bestowed anti-allergic effects to the benefit of these patients in the present study. Probiotics, which may include bacteria, molds or yeast, have been shown to have beneficial effects on human health through the enhancement of the immune system and reduction of the prevalence of allergy in susceptible individuals [16], not least through possible hormesic pressures [17]. As a relatively novel probiotic Milmed, ingested as a suspension consisting of yeast cells, brings several health advantages over-and-above the present amelioration of allergic reactions. It was shown previously that the

combination of Milmed with physical exercise schedules both attenuated and abolished neurotoxin-induced Parkinsonism among laboratory mice [14,15]. Current treatment approaches for allergic rhinitis and others allergies cover a range of interventions, including pharmacotherapy with different agents and/or non-pharmacological treatments and immunotherapy [18,19], amongst others, treatment with corticosteroids [20]. It appears that treatment combinations have been both advocated and applied to ameliorate patients' suffering and discomfort [6,21]. Thus, the combination of an intranasal corticosteroid, budesonide, with a cysteine leukotriene receptor antagonist, montelukast, was found to exert an overall superior efficacy in the improvement of nasal blockage, itchiness, and subclinical lower airway inflammation [22]. Contrastingly, under laboratory conditions, probiotic compounds are implicated in both immunologic stabilization and anti-allergic effects [23-26]. Probiotics present living microorganisms that are offered with claims that they provide health benefits, generally with high-levels of safety, when consumed, often through the improvement of or restoration of the gut flora [27]; their actions may inhibit pathogen-allergen activity and/or promote phagocytosis thereby improving immunological functioning [28]. Thus, it has been implied that probiotics may be effective in the alleviation and/or prevention of allergic conditions, such as allergic asthma. In a mouse model of this condition it was observed that the probiotic, saccharomyces cerevisiae UFMG A-905, potential probiotic yeast, following oral administration prevented the development of major asthma-like characteristics [29]. Finally, in BALB/c laboratory mice epicutaneous exposure to protein allergens together with staphylococcal enterotoxin B induces a T-helper (Th)-2-dominant immune response (Th2 response) co-occurring with atopic dermatitis-like inflammation. Oral administration of Saccharomyces cerevisiae legume-fermented product (SCLFP) attenuated the Th2 response observed through the reduced thickening of the epidermis, decreased eosinophil infiltration and lower levels of Il-5, Il-13 and CXCL11 expression in comparison with the control groups [30]. From a harmonic perspective, it is possible that probiotics and phytochemicals, similar to caloric restriction, intermittent fasting, chronic hyper gravity (5Gs) and physical exercise, activate defensive cellular responses such as autophagy, DNA repair, and the induction of antioxidant enzymes, thereby alleviating or preventing chronic, recurrent disease states, such as allergy conditions [31].

Conclusion

Treated yeast, Milmed, either ameliorated or abolished the allergic reactions of sufferers following a twelve-week course of treatment. The study implies that this type of probiotic intervention ought to be pursued in further investigations of this type. Other forms of Milmed, more amenable to pharmaceutical handling, are currently under production.

Limitations

Due to ethical considerations, regarding possibility for an ameliorating effect of the Milmed treatment, all of the participating allergy-afflicted patients received the treatment from the

start, implying that the study lacked a paired control group. Thus, each participant functioned as his/her own control group.

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