The Effect of Treatment of Blastocystis Hominis in Parasite Positive Urticaria Patients

Thesis

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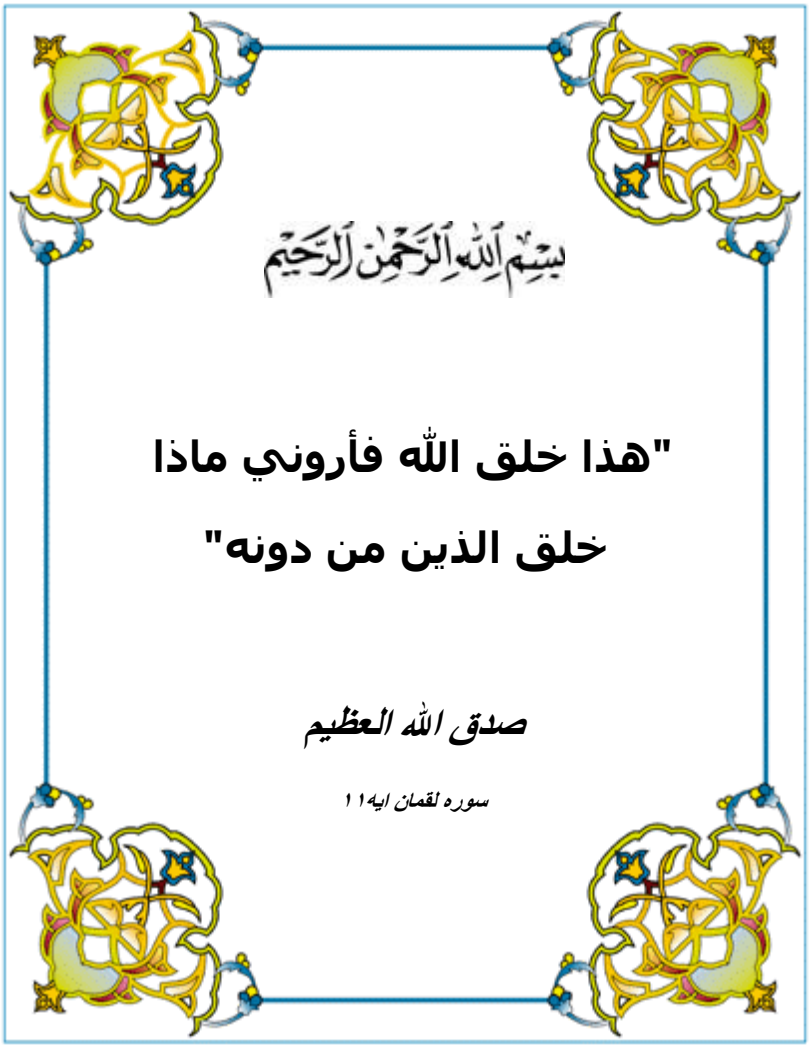
بسم الله الرحمن الرحيم
"هذا خلق الله فأروني ماذا
خلق الذين من دونه"
صدق الله العظيم
سوره لقمان ايه١١

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List of contents

List of Abbreviations

ASST *: Autologus Serum Skin Test*

B. hominis *:Blastocystis hominis*

CID *: Chemical Industries Development*

CIU : Chronic idiopathic urticaria

HS *: Highly Significant*

IL *: Interleukin*

LE *: Locke`s Egg*

NS *: Non Significant*

NIH *: National Institutes of Health*

NSAIDs *: Nonsteroidal anti-inflammatory drugs*

S *: Significant*

SMX *: Sulfamethoxazole*

SPSS *: Statistical Package for Social Science*

ST *:SubType*

TLR *: Toll like Receptor*

TMP *: Trimethoprim*

List of Figures

List of tables

Tab. No ***Title*** ***Page***

Introduction

Urticaria is characterized by sudden appearance of itchy red evanescent wheals that last only within few hours by appearance of new lesions. Urticaria may persist for few days in acute urticaria and months in chronic urticaria (>6 weeks).It is due to transient leakage of plasma from dilated small blood vessels into the surrounding tissues of the dermis **(Najib and Sheikh, 2009)**.

It is caused by an allergic (type 1 hypersensitivity) or non allergic mechanism. Chronic urticaria may be autoimmune in 50% of cases (with histamine-releasing auto-antibodies) or idiopathic in 50%. Provoking causes could be drugs, certain foods, food additives, certain inhalants, infections, infestations, general medical disorders, insect bites, physiological and physical agent. The aetiopathogenesis of chronic urticaria remains often undefined. The term chronic idiopathic urticarias identify the high percent of conditions in which a pathogenic factor has not been found **(Nettis et al., 2003).**

Food and drug allergies are the commonest causes including also the more subtle factors as sensibility to food dyes, natural salycilates and benzoic acid derivatives. Identifiable causes of symptoms include occupational exposure, insect bites and physical hypersensitivity (cold, heat and exercise) **(Kaplan, 1998).**

A particular form of urticaria (autoimmune urticaria) develops as a consequence of the production of autoantibodies directed against IgE-receptor and in a 5% of cases against IgE **(Ortonne, 2003).**

Chronic urticaria may be the presenting symptom of an underling systemic disease and in particular connective tissue diseases (such as systemic lupus erythematosis, rheumatoid arthritis and sjogren disease) and systemic vasculitis . An increased incidence in thyroid disease has also been observed **(Hachulla, 2003)**.The association of chronic urticaria with carcinoma of the colon, rectum or lung as well as with lymphoid malignancies has been reported too **(Kaplan, 1998)**.

Undetected infections have long been considered as underlying cause of chronic idiopathic urticaria even if the incidence seems extremely low. Urticaria has been documented during viral infections such as infectious hepatitis and Mononucleosis. Helicobacter pylori infection has been correlated with chronic urticaria in some studies **(Cribier and Noacco , 2003).**

A large number of helminthic parasites including Ascaris, Strongyloides, Filaria, Echinococcus, Schistosoma, and Trichinella have been also associated with allergic cutaneous symptoms **(Kaplan, 2002).** Some studies have suggested a high prevalence of Toxocara canis, Giardia lamblia, Fasciola hepatica in patients with urticaria, but antiparasitic treatment had only inconstant effect **(Demirci et al., 2003).**

To our knowledge few data relate Blastcystis hominis infection to chronic urticaria. Blastocystis is a genus of single-celled protozoan parasites belonging to a group of organisms known as the Stramenopiles. Blastocystis comprises several species, living in the

gastrointestinal tracts of species as diverse as humans, farm animals, birds, rodents, reptiles, amphibians, fish and cockroaches **(Yoshikawa et al., 2004).**

Blastocystis hominis may be more common in tropical countries, and is certainly more prevalent in poorer countries. Poorer areas have prevalence rates of 30-50%, compared to 1-10% in wealthier parts of the world **(Arisue et al., 2002)**

Blastocystis hominis is a frequent intestinal protozoan that seems not merely to be a commensal organism but should be regarded as a potential pathogen **(Barahona Rondon et al., 2003).**

Feco-oral transmission is the most accepted pathway, and some studies have shown that transmission involves only the cyst form of the parasite **(Yoshikawa et al., 2007).**

Its presence may induce gastrointestinal symptoms that generally remain mild as abdominal pain, constipation, diarrhea, weight loss, fatigue and flatulence. Less commonly reported symptoms are skin rash, urticaria, headache, depression, arthritic symptoms, joint pain and intestinal inflammation **(Micheloud et al.,2007).**

Aim of the Work

The aim of this work is to study the effect of the treatment of Blastocystis hominis on parasite positive urticaria patients.

Urticaria

1.1 Definition

Urticaria (or hives) is a kind of skin rash notable for pale red, raised, itchy lesions. Hives are frequently caused by allergic reactions; however, there are many non-allergic causes. Most cases of hives lasting less than six weeks (acute urticaria) are the result of an allergic trigger. Chronic urticaria can be applied if hives lasting longer than six weeks **(Najib and Sheikh, 2009).**

1.2 Clinical picture

Wheals can appear anywhere on the surface of the skin. Angioedema is a related condition (also from allergic and non-allergic causes), although fluid leakage is from much deeper blood vessels. Individual hives that are painful, last more than 24 hours, or leave a bruise as they heal is more likely to be a more serious condition called urticarial vasculitis. Hives caused by stroking the skin (often linear in appearance) are due to a benign condition called dermographism **(Frigas and Park ,2009).**

1.3 Etiology

Urticaria is classified as acute (70%) or chronic (30%); acute cases are more common than chronic ones **(Zuberbier and Maurer, 2007).**

Contact or inhaled allergens

Latex, animal saliva, dust, pollen, molds and dander may be causative factors of urticaria within minutes or hours after contact with the offending agent, causing acute urticaria **(Poonawalla and Kelly, 2009).**

Drugs

Cyclooxygenase inhibitors (eg, aspirin, NSAIDs), direct mast cell releasing agents (eg, opioids, vancomycin , succinylcholine , curare, radiocontrast agents).IgE mediated ,Increased bradykinin levels (ACE inhibitors). Urticaria appears within 48 hours of drug exposure. Angioedema is common with ACE inhibitors **(Zuberbier et al., 1996).**

Emotional or physical stimuli

Adrenergic (stress, anxiety), cholinergic (sweating, eg, while taking a warm bath, while exercising, or during episodes of fever), cold, delayed pressure, exercise, focal pressure (dermatographism), heat, sunlight (solar urticaria), vibration. Urticaria starts typically within seconds or minutes of exposure to the offending stimulus **(Magerl et al., 2009).**

Infections

Bacterial (eg, group A streptococci, Helicobacter pylori),parasitic (eg, Toxocara canis, Giardia lamblia, Strongyloides stercoralis, Trichuris trichiura, Blastocystis hominis) **(Robert et al.,2009)** ,viral (eg, hepatitis A, B, or C; Human Immunodeficiency Virus; Cytomegalovirus; Epstein Barr virus; enterovirus). Symptoms of systemic infection may be present together with urticaria **(Federman et al., 2003).**

Ingested allergens

Peanuts, nuts, fish, shellfish, wheat, eggs, milk and soybeans may cause acute urticaria **(Tebbe, et al., 1996).**

Insect bites or stings (*Hymenoptera* venom)

Urticaria within seconds or minutes after insect bite or sting causing acute urticaria **(Grattan, et al., 2001).**

Serum sickness

Urticaria with or without fever, polyarthralgia, polyarthritis, lymphadenopathy, proteinuria, edema, and abdominal pain within 7–10 days after parenteral administration of a biologic-based drug or substance, causing acute urticaria **(Zuberbie et al., 1996).**

Transfusion reactions

Urticaria may occur within a few minutes after initiating blood product transfusion (or switching to a new unit of blood product) causing acute urticaria. **(James et al., 2005).**

Autoimmune disorders

May cause chronic urticaria (eg, systemic lupus erythromatosis, Sjögren's syndrome, autoimmune thyroid disease, cryoglobulinemia, urticarial vasculitis). **(Niimi et al., 1996).**

Cancer

Typically Gastrointestinal, lung, lymphoma may cause chronic urticaria **(Lindelo et al., 1990).**

Chronic idiopathic urticaria

Occurrence of daily (or almost daily) wheals, and itching for at least 6 weeks, with no obvious cause. Diagnosis of exclusion **(Yosipovitch and Greaves ,2008).**

Endocrine abnormalities

It usually causes chronic urticaria eg, thyroid dysfunction, elevated progesterone level, patients taking progesterone-containing oral contraceptives or hormone replacement therapy or those with cyclic urticaria that appears during the 2nd half of the menstrual cycle and resolves with menstruation **(Heymann, 1999).**