

development of COPD and hypoacid gastritis. So, althea officinalis roots can be recommended to standard therapy of this comorbidity.

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**THE CLINICAL RELEVANCE OF MORINGA OLEIFERA  
EXTRACTS IN THE TREATMENT OF HYPERGLYCAEMIA IN  
NIGERIAN PATIENTS WITH RHEUMATOID ARTHRITIS**

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**INTRODUCTION:** Moringa Oleifera is a plant that is native to the sub-Himalayan areas of Republic of India, Pakistan, Bangladesh, and conjointly in the tropics. The different parts of the plant including the leaves, the flowers, fruits, the seeds, and even root are used as medicine. It is an important food source in various parts of the world because, it can be grown cheaply and easily, and the leaves retain countless vitamins and minerals when dried. The dried leaf of the Moringa tree is a rich source of protein containing all 8 essential amino acids, as well as Omega 3, 6 & 9, and it is rich in Vitamins A to K, providing the body with forty-six (46) powerful antioxidants. Moringa's nutrient profile is abundant with mineral and trace elements such as calcium, iron, magnesium, potassium and zinc and due to this, beneficial for maintaining healthy bones and helps to heal bone ailments. Furthermore, it has been used to reduce the effects of rheumatoid arthritis. Moringa oleifera is a natural, whole-food source of nutrients and minerals that are readily available for the body to identify, absorb and utilise. It possesses anti-hyperglycaemic properties thus assisting to decrease blood sugar levels, hyperglycaemia is becoming a lot more prevalent in today's world. It is the main feature of diabetes and several heart diseases and is therefore a serious health problem.

**RELEVANCE OF THE RESEARCH:** Rheumatoid arthritis is a long-term, progressive, and disabling autoimmune disease. It causes inflammation, redness, edema, and pain in and around the joints and other organs in the body. The prevalence of rheumatoid arthritis varies according to ethnicity and residential region from approximately 0.48–1% in adult population. In Nigeria, approximately 0.27% of the total population has rheumatoid arthritis. The causes of rheumatoid arthritis is yet to be completely elucidated, and multiple factors including genetic and environmental triggers and immunologic factors are known to be concerned within the pathophysiology of rheumatoid arthritis. Due to these multiple motive factors, many systemic diseases, such as cardiovascular disease and diabetes, have been described to be associated with rheumatoid arthritis. Steroids are drugs that are widely prescribed for their anti-

inflammatory and immunosuppressive properties and they are used to treat a wide range of conditions, as well as rheumatoid arthritis. Although widely prescribed, glucocorticoids have several side effects, being hyperglycemia one of the most common.

**AIM OF THE RESEARCH:** The aim of this study is to evaluate the relevance of moringa extracts in the treatment of hyperglycaemia caused as a result of steroid prescription in Nigerian patients with rheumatoid arthritis.

**MATERIALS AND METHODS:** Study was performed on 25 randomly selected male individuals diagnosed with rheumatoid arthritis with the following prerequisites : i) Fasting blood glucose (FBG):  $130.7 \pm 2.2$  mg/dL; ii) Glycated hemoglobin (HbA1c):  $> 6.2 \pm 2.8\%$ ; iii) Age:  $51 \pm 4$  years; iv) Body weight (BW):  $87.2 \pm 6.3$ kg; v) BMI:  $29.2 \pm 2.1$ . It was reported that these patients had steroid-induced hyperglycaemia which had been diagnosed 4 months prior commencing the study. The place of the trial was Maitama General Hospital, Abuja, Nigeria. 15 patients were placed in Group A, they were continually given a diet with 2 tablespoons (20g) of Moringa Oleifera dry leaf powder 2 times a day (lunch and dinner), for 10 weeks while the remaining 10 patients formed a control Group B and these patients were given basic but controlled diets without the herbal supplement.

**RESULTS:** In the Group A patients, HbA1c and FBG decreased continually. Significant effects occurred in HbA1c level after 4 weeks and was more pronounced at the end of the study. Significant reductions in FBG concentration was observed after 10 weeks in comparison with the initial values at the start of the trial. The two parameters in the control group B showed no significant decrease after the 10 weeks. (Group A; FBG: 105.4 mg/dL, HbA1c: 5.28% versus Group B; FBG: 112.1 mg/dL, HbA1c: 5.8%). The results also indicate that the dietary restrictions induced progressive diminutions in both the control group B and the Moringa-diet group A patients. After 10 weeks, the BW reduction was significantly greater in the moringa-diet group (5.25 kg) than that observed in the control-diet group (3.4 kg). Furthermore, patients in group A reported that there was significant improvement in the symptoms brought on by rheumatoid arthritis.

**CONCLUSION:** The short diet restriction period of 10 weeks showed that the consumption of moringa oleifera as a food supplement is a means of maintaining blood glucose and body weight in the normal medically defined ranges. The observed results in this research also indicates that both a radical dietary restriction and dietary supplementation of Moringa Oleifera have positive blood sugar effects and anti-inflammatory properties that helps relieve the stiffness, redness, inflammation, pain and swelling brought on by arthritis.