# The Efficacy Of Ugu (Telfaira Occidentals) In The Management of Childhood Anemia: A Report of 2 Cases

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**Abstract**

Purpose: To show that the Ugu vegetable extracts (Telfaira Occidentals) is efficacious in the management of severe anemia in the paediatric age groups.

Methods: Case reports of two severely anemic patients, whose parents refused blood transfusion and were subsequently managed with oral intakes of the Ugu vegetable extracts, with satisfactory rise in the hematocrit levels.

Results: The pre- Ugu administration pack cell volume of 15% in both of them, rose to 20% in one and 25% in the other, 24 hours post administration of the extract.

Conclusion: The Ugu vegetable extract was efficacious in the management of severe anemia in these 2 children and may be useful in pediatric patients with severe anemia whose parents refuse blood transfusion. The vegetable extract may have an even greater role in the prevention of anemia if intake is instituted early. Wider studies are needed to investigate these hypotheses.

## INTRODUCTION

Anemia is a common childhood disease in the third world countries. [1] It is sometimes life threatening and may require urgent blood transfusion. However parents occasionally refuse blood transfusion because of religious or other reasons. [2] Members of the Jehovah witness sect usually refuse blood transfusion for themselves and their wards because of some biblical injunction. The problems and costs attending blood transfusion in our poorly developed health services often tempt some parents to refuse the procedure. It is therefore imperative for physicians to be aware of all available alternatives to blood transfusion.

The Ugu (Telfaira Occidentals) vegetable is a green vegetable (Pumkin), which was found useful in correcting anemia in a study of some African pregnant women. [3] In the study, thirty anemic pregnant women with base line pack cell volumes of 20.8+/-2.0% were given freshly prepared Ugu mixture, containing, Ugu (pumkin) fluid extract, raw eggs and evaporated unsweetened milk, orally three times daily for seven days. The mean pack cell volume was observed to have increased to 29.5+/-2.2%, a day following the administration of the mixture ($P<0.05$).

There is no documentation of the use of Ugu in the management of anemia in children. The purpose of this article is to draw the attention of medical practitioners managing children to the possibility of Ugu acting as a surrogate to refused blood transfusion in anemic children. It may also have a role in preventing anemia.

## CASE REPORTS

### CASE 1

A14-year-old known male sickler (hemoglobin genotype SS) presented at the children emergency unit of the Wesley Guild Hospital, Ilesa, Western Nigeria, with a three-week history of intermittent fever and generalized body pains. Clinical examination revealed an acutely ill boy with a temperature of 38.8°c. There was moderate palor, jaundice, dehydration and tenderness in the upper and lower limbs. The liver was palpably enlarged to 4 cm below the right costal margin and was not tender. The pulse rate was110 per minute and respiratory rate 44 cycles per minute. An assessment of sickle cell vaso-oclusive crisis was made, with underlying malaria.

The pack cell volume at admission was 23% and the blood

film showed the presence of malaria parasites. Intramuscular Artemisin, Pethidine, oral Camoquine, and intravenous hydration were commenced. After hydration the repeat pack cell volume at 24 hours post admission was 15%. The fever was subsiding but the patient still had severe generalized pains. In consideration of the sum total of the clinical problems of the child a decision was made to transfuse him with blood, but the mother refused and opted for the child to take extracts of the Ugu Vegetable. However she promised to let the child take the blood if he deteriorated any further. The fever subsided 36 hours after the commencement of anti-malarials, while the pack cell volume rose to 25% and the bone pains subsided at 48 hours post admission (24 hours after the administration of Ugu). The patient was discharged home much improved thereafter.

## CASE 2

AJ a one-year-old girl presented at the children's emergency unit of Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Western, Nigeria, with a 10 days history of intermittent fever. This was associated with vomiting and poor feeding noticed 6 days prior to presentation. Examination revealed a conscious, ill looking child with a temperature of 39.2°C. She was very pale, anicteric, acyanosed and weighed 7.8kg without pedal edema. Abdominal examination showed hepato-splenomegaly of 6 cm and 4 cm respectively below the costal margins. The heart rate was 160 beats per minute and the respiratory rate 52 cycles per minute.

An assessment of severe anemia secondary to malaria was made. The blood film microscopy showed trophozoites of Plasmodium falciparum. The pack cell volume was 18% while the white blood count and differentials were normal. Red blood cell morphology showed anisocytosis, poikilocytosis, and acanthocytosis and the heamoglobin genotype was AA

The parents declined transfusion but requested that any other alternative, which might help, should be tried. The patient was commenced on Artemisin and oral Amodiaquine. The fever subsided 36 hours after commencement of the anti-malarials, but the pack cell volume had fallen to 15% .The parents still refused blood transfusion because of financial constraints and requested that the child should be placed on Ugu vegetable extract. Milk was added to the Ugu extract to make it palatable to the child. Twenty-four hours after administration of the Ugu extract the pack cell volume rose to 20%. The child was subsequently discharged to the paediatric out patient clinic.

## DISCUSSION

Life threatening anemia is a common emergency among Nigerian paediatric admissions. [1] Malaria, sickle cell disease, glucose 6-phosphate dehydrogenase deficiency and septicemia are common causes.[1,4] The logical and most effective method of managing such cases to is by blood transfusion. However, as in these reports, parents occasionally refuse blood transfusion for their children because of religious, cultural, financial and other reasons. [2,5]

In our practice setting, the direct cost of screening and transfusion services to the patient for a pint of blood ranges between 10 and 20 U.S dollars. This is often unaffordable to many parents. Thus in a study of patients discharged against medical advice, financial constraints was given as the reason for refusing blood transfusion by the parents of some severely anemic, because of their inability to procure the blood needed for transfusion.[5] Cultural practices in many parts of Africa dictate that mothers should obtain permission from their husbands before submitting their children for medical care and procedures like blood transfusion. This may make a mother refuse transfusion when the family situation is not congenial. [5] Sometimes such fathers are unavailable or inaccessible to give consent.

Concerning complementary and alternative medicine (CAM), most physicians are poorly informed on, the use of herbs for medical conditions. [6,7] Sometimes patients and their relations are better informed compared to the attending physician. [7] This was the case in these 2 patients, in whom the Ugu was effective. The Ugu vegetable is an indigenous pumpkin to the eastern parts of Nigeria. Usually, it is administered either as an extract obtained from blending or manually squeezing the soaked vegetable leaves in tepid water in order to extract the fluid, or it can be eaten as a cooked vegetable. Its mechanism of action is not known. Extracts from Telfaira Occidentals are known to have reducing and free radical scavenging properties; through its antioxidant phytoconstituents such as vitamin C and phenols.[8] These anti-oxidants may reduce tissue and red cell destruction by free radicals. The Ugu vegetable is also rich in folic acid and iron, [2] which may be more easily bio-available for erythropesis compared to nutrients from other sources. Due to the fact that there are no suitable alternative oxygen carrier substitutes for heamoglobin, [9] erythropoesis remains the safest means of alleviating hypoxemia from very low heamatocrit levels.

The two cases have also shown that Telfaira Occidentals acts very fast and its effects were evident within 24 hours. Other hematinics such as erythropoetin, iron, folic acid and vitamin B complex do not work as fast as Telfaira Occidentals.[4,10] It takes a range of 5 days to 3 weeks after administration before their effects can be seen. The other advantages of Telfaira Occidental over blood transfusions are avoidance of transmission of infections and blood transfusion reactions.[10] In addition, the cost of administering Ugu is much less than giving a pint of blood, or erythropoeitin. Ugu therapy reduces the number of days that the patient spends on admission, waiting for the improvement in pack cell volume when being managed with hematinics. All this not withstanding, blood transfusion acts faster than any other method by raising the pack cell volume immediately the blood is transfused.

In order to reduce the morbidity and mortality associated with anemia in children whose parents refuse blood transfusion for them, the etiology of the anemia should be investigated and treated promptly. Ugu vegetable extracts should be administered. The vegetable can also be given as part of the diet to children predisposed to developing severe anemia, such as sicklers and G-6-PD deficient patients when they are being treated for malaria. Thus Ugu vegetable has both prophylactic and curative roles and it has the potentiality of reducing the frequency and problems of blood transfusion in paediatric practice. Detailed studies of its mechanism of action should however be undertaken prior to liberalizing its use. Cautionary measures may also need to be taken with respect to prolonged use, especially in sicklers, in order to prevent pathologic tissue deposits of iron. The use of alternative methods of treatment is rapidly increasing among patients [11] and the physicians needs to be conversant with these therapies.

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