A Pilot Study Evaluating the Efficacy of Epigran Protein in Patients with Chronic Wound

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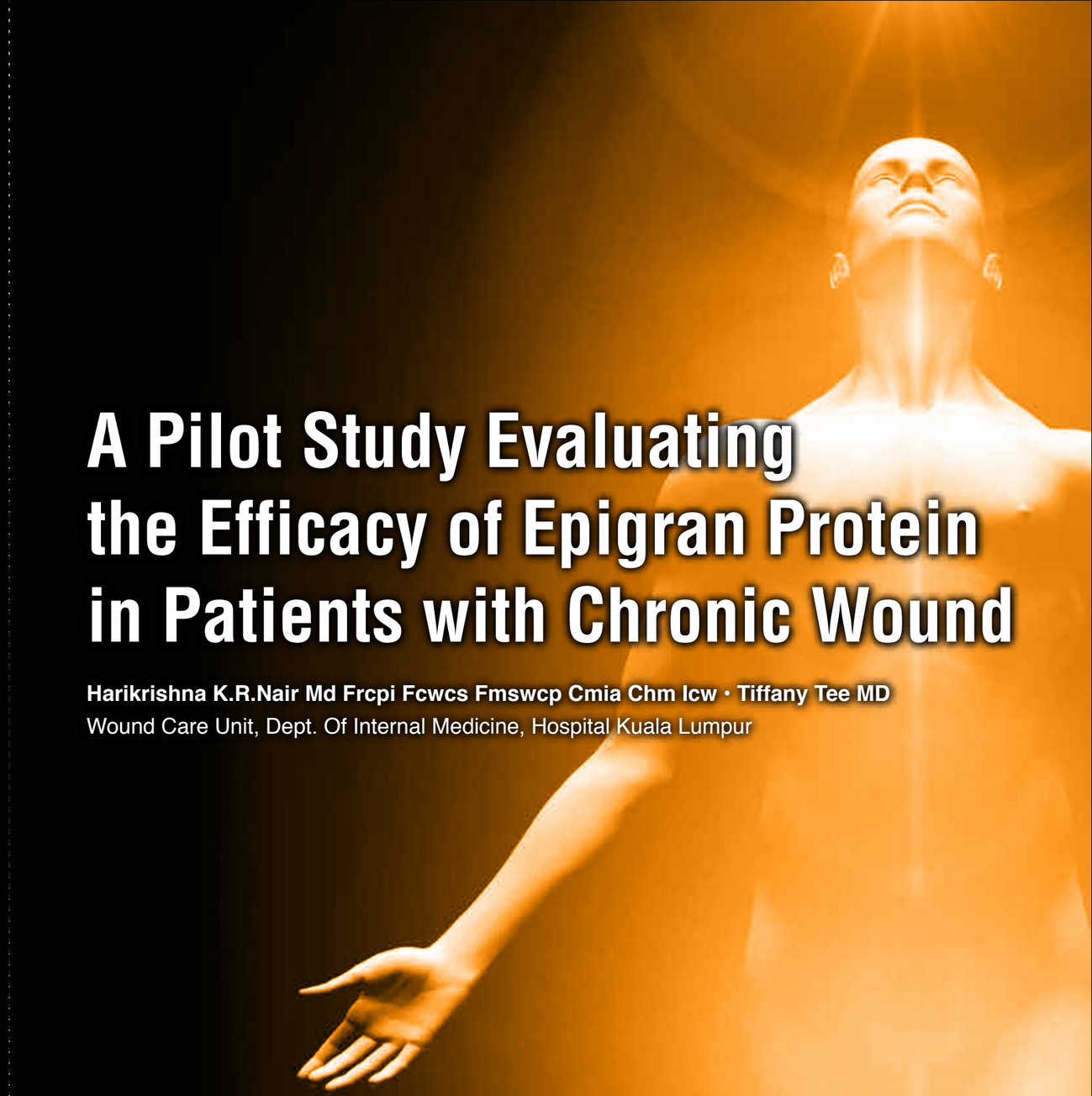

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Introduction

The concept of preparing the wound bed was updated in 2007 to consider the whole patient before treating the wound. A full and detailed patient assessment will highlight the underlying aetiology of the wound and other factors that may impede wound healing such as pain and poor nutrition. In the hospital, malnourished patients face increased complications, such as infections, slower recovery, a higher risk of infections at surgical sites and an overall higher risk of death.

Nutrition plays a vital role throughout all stages of wound healing. Leigh et al 2012 observed that well-nourished patients displayed greater improvement in healing rates than malnourished patients.

NHS Tissue Viability Leadership Group 2014 highlighted the fact that nutritional status plays a critical role in the wound healing process. The study highlighted protein, energy fluid, vitamin A, C, B complex, Zinc, Iron, Copper as being nutritional components essential for wound healing. Various recent studies concluded micro nutrients such as arginine, glutamine and branch-chain-amino acid (leucine) are important components of wound healing.

Epigran Protein to be introduced in the pilot study contains ingredients recognized scientifically to provide benefit in helping wound recovery. In addition to that, Edible birds nest (EBN) were added into the sachet powder drink. EBN has epidermal growth factor EGF like activity that will aid skin & tissue regeneration.

Methodology

- 6 patients were supplemented with Epigran Protein 30g sachet to be taken twice daily for a duration of 4 weeks. All patients received standard of care whereby the diabetic foot ulcers were offloaded and compression was used on the venous ulcer cases. Follow up visit was planned weekly with monitoring of key parameters; albumin level, wound size, side effect and appetite.

Result

All 6 patients who have chronic wounds ranging from 4 months to 2 and a half years had an increase in their albumin levels after 4 weeks of supplementation with Epigran Protein. The percentage of increase ranged from 30 to 61% which is a very good marker as protein is the building block in the wound healing process. In addition , the wound size which was measured routinely in terms of length and width also showed improvement. All patients received standard of care whereby the diabetic foot ulcers were offloaded and compression was used on the venous ulcer cases. There was no side effects or untoward reactions in all cases. Patients reported an increase in the appetite. Patients were satisfied with the product especially its taste. They found it palatable.

Epigran Protein @ BD Dose					
	Albumin Level - Normal Range: 35-55 g/l				
Patient	Start	Week 1	Week 2	Week 3	Week 4
Patient 1 - 47kg	25	37.7	40	40.3	40.4
Patient 2 - 56kg	25	31	30.5	33.8	32.6
Patient 3 - 58kg	25	40	39.2	40.1	39.9
Patient 4 - 74kg	29.7	32.5	35	38	42.2
Patient 5 - 47kg	30	34.7	37.2	38	39.4
Patient 6 - 75kg	24	28	30	34	38.3

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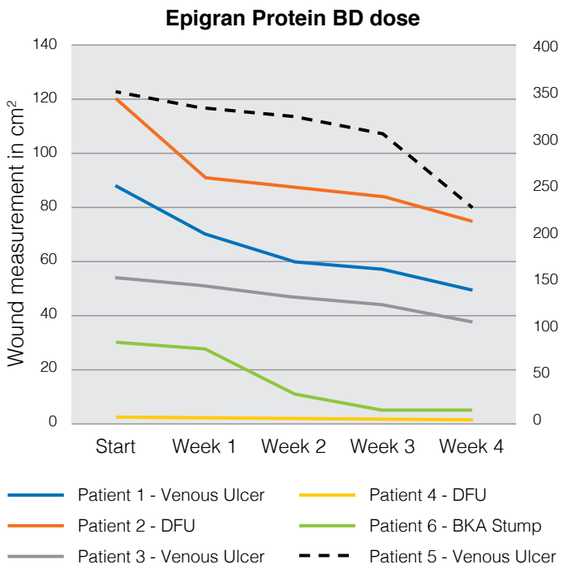

Conclusion

The Epigran Protein which consists of all essential wound healing micronutrients has proven to be effective in increasing the albumin levels and help in the area reduction of the chronic wounds. Therefore, it is a good supplementation to be used with concurrent dressings as per standard of care. There were also no side effects as it is taken orally and it is well tolerated.

Epigran Protein ingredient Arginine is heavily researched and proven to bring about benefit in polytrauma[5], wound healing and pressure injury[6,7,8]. It increases collagen deposition and is a metabolic substrate for the synthesis of Nitric Oxide which helps in vasodilatation & improving blood flow. Glutamine protects against inflammatory injury by inducing expression of heat shock proteins, providing cellular protection in inflammation, injury and stress[7,9,10,11]. Branch Chain Amino Acid (Leucine) prevents the breakdown of muscle proteins that occur after trauma or severe stress. It enables growth hormone production, helps in wound healing and is shown to reduce negative nitrogen balance in the body and decreases stress index, helps in severe insults like cases of burn, trauma and sepsis[12,13.] Correct traces of Vitamin A, Vitamin C, Vitamin E, Zinc, Copper, Selenium balance is pivotal for wound healing[14,15,16,17.] Edible Birds Nest (EBN) ingredient N-acetylneuraminic acid (sialic acid) is a food rich in glyconutrients such as collagen and amino acids. Proven in 1980s to have epidermal growth factor (EGF)-like activity[18]. Many later scientific research find EBD to strengthen immunity, anti inflammatory and mitogenic activity to promote the regenerative and proliferative ability of human adult stem cell, human adipose-derived stem cells (hADSCs).. but not cancer cells [19,20,21,22,23.]

One of the hurdle that wound patient face in recovery is enough uptake of essential nutrition. A weak patient is unable to have appetite to have enough food intake to generate sufficient energy and nutrient for wound heal. Thus, Epigran Protein drinks is there to add on to daily diet to provide the energy, fluid, various vitamin minerals, essential micronutrient of Arginine, Glutamine branch chain amino acid (Leucine) and EBD to aid in wound healing process.

Patient 1. - 69 years old female
Venous Ulcer since March 2019

Before After 28 days

Patient 2 - 67 years old female
Diabetic Foot Ulcer since June 2019

Before After 27 days

Patient 3 - 80 years old female
Venous Ulcer since March 2017

Before After 35 days

Patient 4 - 65 years old male
Diabetic Foot Ulcer since May 2019

Before After 37 days

Patient 5 - 66 years old male
Venous Ulcer since July 2019

Before After 24 days

Patient 6 - 60 years old male
BKA Stump Wound since August 2019

Before After 28 days

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