



## STUDY OF BILIRUBIN LEVEL IN BLOOD AFTER LEECH THERAPY IN WOUND INFECTION

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**ABSTRACT:** Leech therapy has been administered since ancient times. The popularity of leeching varied immensely over the years especially during the 19th century. Today, leech therapy is used to promote healing in an infected and non-infected wound. It helps reduce venous congestion so as to aid plastic surgery as well as reconstructive surgery. Leech therapy is a complementary and alternative therapy known as Hirudotherapy which doesn't hurt and also with minimal adverse effect. The leech's saliva contains enzymes and compounds which possess an anti-inflammatory, anticoagulation and vasodilating effect.

**Key words:** - Medicinal leeches, Bilirubin, wound infection, Hirudotherapy

### INTRODUCTION:

Leech therapy played an important role during the seventeenth and eighteenth centuries, at which time it was used for medicinal "blood-letting" and "purification" - a practice believed to cure a variety of ailments from gout to headaches. In the early 1880s Haycraft first noted the antithrombotic properties of leech saliva and Jacoby discovered the anticoagulant factor in leech saliva and named it hirudin in 1904. (Fields WS 1991) Hirudotherapy re-emerged as an adjunct to plastic, reconstructive, and trauma surgery in the 1970s and 1980s. (Munshi et al 2008; Durrant et al 2006 de Los Mozos 2007)

Leech therapy is one of the most important and widely practiced methods of treatment used for local evacuation of morbid humours. It is a method of bloodletting which involves the withdrawal of blood in a considerable quantity from the body with the help of medicinal leeches. (Cole D 1985)

Or in other words it is a procedure of treatment through blood sucking process with the help of medicinal leeches for prevention and treatment of various diseases. This therapy has unique features that are easily recognized. It has been used effectively for the management of various

disorders specially skin and musculoskeletal disorders where western medical treatment is of less value.

It may also be used for the restoration of normal health through its prophylactic and palliative action. It may produce better results either singly or as an adjuvant with drug therapy in diseases like hypertension, thrombosis, atherosclerosis, arthritis, varicose veins, frostbite, skin diseases like dermatophytosis, psoriasis, eczema, vitiligo and in various surgical and traumatic conditions such as re-attachment of severed extremities, fingers, toes and ears. (Weinfeld et al 2001)

There are several types of wounds, such as surgical, traumatic, and chronic. Two categories of wounds exist, namely, partial and full thickness. Full-thickness wounds involve a loss of deeper layers of skin and fat; they disrupt the blood vessels and produce a scar when healed. (Sussman 2011). Wound-care treatments are debridement, alleviation of weight-bearing wounds, compression therapy, antibiotics, hyperbaric oxygen therapy, whirlpool therapy, ultrasound treatment, electrical stimulation, and magnetic therapy. There are also many wound-care products such as alginates, antimicrobials, and hydrogels. Sussman C 2011. Wound healing immediately

starts after an injury and proceeds with a complicated but well-organized interaction among various types of tissues and cells .Baranoski S 2007

**COMPARISSION OF BILIRUBIN BETWEEN GROUPS A AND C**

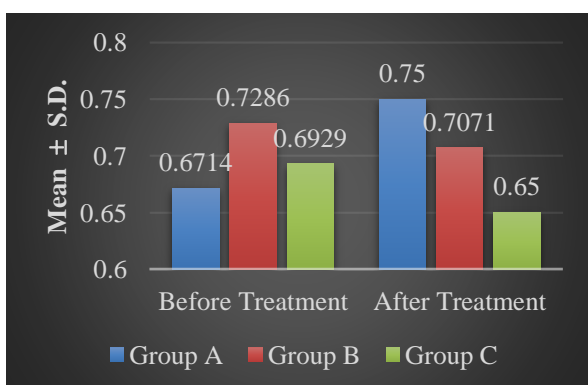
		Before treatment (mean±sd)	After treatment (mean±sd)
<b>Group A</b>		.6714±.227	.7500±.416
<b>Group C</b>		.6929±.256	.6500±.235
<b>Comparison between Group</b>	<b>T-value</b>	-.20	.67
	<b>P-value</b>	.842	.513
<b>Remarks</b>		NS	NS

Bilirubin level in slightly increased in group A while in group B and C it reduced but significantly it remain in the normal range, after treatment. Statistical analysis suggestive of non significant change.

**COMPARISSION OF BILRUBIN WITHIN GROUPS**

		Group A	Group B	Group C
<b>Before treatment (mean±sd)</b>		.6714±.227	.7286±.233	.6929±.256
<b>After treatment (mean±sd)</b>		.7500±.416	.7071±.234	.6500±.235
<b>Comparison within groups</b>	<b>T-value</b>	-.951	.444	1.385
	<b>P-value</b>	.359	.664	.189
<b>Remarks</b>		NS	NS	NS

**GRAPH OF OBSERVATION**



**Bilirubine- Mg/bl**

**DISCUSSION AND CONCLUSION:**

Skin-wound healing consists of the inflammatory, proliferative, and maturation phases. In the inflammatory phase, the recruitment of leukocytes such as neutrophils and macrophages into the wound site is characteristic. In the proliferative phase, the migration and proliferation of keratinocytes, fibroblasts, and endothelial cells result in epithelialization and tissue granulation. In the maturation phase, excess collagen in the wound site is degraded by several proteolytic enzymes, leading to the completion of tissue repair. It is considered that perfusion is an important factor in accelerating the healing rate of skin wounds. The saliva of medicinal leeches demonstrated such an ability of perfusion.

Anaphylaxis and local allergic reactions due to salivary secretion of leech products must be cured right selection of antibiotic. The hospital pharmacy must have a storage tank for protection and farming of leeches and must design proper protocol for disposing of used medicinal leeches by using proper bio waste management technique. leech therapy that has been medically approved, which is minimally invasive, painless therapy with minimal incidence of mild infection reported.

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