

Leech therapy: Biology, Morphology and Applications

Nizar Majeed*

Department of Physiotherapy, Kutty University Tunku Abdul Rahman, Malaysia

Medicinal leech therapy (MLT) or hirudotherapy is a sort of corresponding and integrative treatment strategy applied with parasitic bloodsuckers or leeches. At least one blood suckers or leeches are appended to the skin of dangerous region and the intention is to acquire expected utilities of parasite salivation that is emitted while the parasites are taking care of. MLT has been utilized for quite a long time and the term siphon was given from "laece" (doctor). The previously recorded applications were seen in old Egypt. Also, Chinese, Arabic, Anglo-Saxon, Ancient Greek, and Roman clinical records have many references to MLT. In seventeenth century Europe, MLT arrived at its largest area of use. Since the 1900s, consideration of clinical experts has diminished, however over the most recent 30 years, MLT has turned into a significant piece of much logical examination [1].

Leeches live in new water and are divided, bisexual, rapacious worms. They are delicate to vibrations on the water, contact, light, hotness, sound, and different synthetic substances. They are multi segmented, including "cerebrum parts", and each section has various organs like ganglions and gonads. Two sucker parts work for crawling and adherence; the foremost one has three jaws including numerous teeth. They by and large chomp warm pieces of the host and suck its blood with musical withdrawals. Taking care of for the most part requires just about 40 minutes and a parasite digests 10-15 mL of blood for each taking care of. Assimilation is accomplished by numerous chemicals and shared microorganisms [2,3].

Leech Feeding Biology

Based on feeding habits, leeches are isolated into two significant groups. The primary group incorporates the predacious bloodsuckers, which are hunters of many spineless creatures. The subsequent gathering, named the sanguivorous leeches are ectoparasites that feed on the blood of vertebrates including human. With the assistance of suckers and jaws, leeches can ingest prey blood. It is intriguing to take note of that leeches for the most part suck 2-20 ml of blood inside 10-30 min, then, at that point, drop-off suddenly subsequent to being totally engorged with no prompt craving of seriously taking care of.

Leeches, both sanguivorous and predacious, digest their food in their digestive system. The sanguivorous species just store blood inside their body for a really long time. In reality, the assimilation cycle of blood in hematophagous leeches goes through many sluggish stages permitting parasites to store the ingested blood for as long as year and a half. Harmonious microorganisms named *Aeromonas* spp, situated in the parasite's stomach, emit catalysts that help not just in separating the parts of the ingested blood, yet additionally in delivering anti-toxins to forestall blood rotteness after a long stockpiling period in siphon crop. Moreover, one more assumed job of these catalysts is to forestall B complex lack, which regularly happens in blood nourishment depending creatures [4].

Taxonomy and Morphology of Leeches

Leeches (Euhirudinea) were first named by Linnaeus in 1758 AD. They are connected with the phylum Annelida, class Clitellata. As a general rule, early investigations characterized leeches into 4 subclasses, 3 orders, 10 families, 16 subfamilies, 131 genera and in excess of 696 species. As of late, taxonomists distinguished in excess of 1000

bloodsucker species. Siphon size differs among families and can reach up to 20 cm long, notwithstanding a few monster animal types, for example, the Amazonian leech, *Haementaria ghilianii*, which is around 50 cm long. An exemplary bloodsucker body comprises of many fragments separated as two preoral, non metameric sections, and 32 postoral metameres (somite's). Somite's are partitioned into 2-16 outer annuli, and the annulation example can be considered as an indicative element for siphon class and species. Tangible designs, like eyes, oculiform spots, papillae and sensilla are likewise utilized by taxonomists to distinguish family, and species. Regularly, a bloodsucker has front and back suckers. A few bloodsuckers connected with the request Rhynchobdellida have a huge front sucker with a little jaw-less mouth and protrusible strong proboscis. Others from the request Arhynchobdellida have a basic front sucker with a wide mouth, which might have jaws, for example, in hirudinids and erpobdellids, individually. Suckers are exceptionally fundamental during development (inchworm-like headway) and for connection to have surface. Leeches inhale through the skin and they are considered as bisexuals, yet consistently require one more bloodsucker for preparation [5].

Applications

Cardiovascular illnesses

CVDs are a group of persistent irregularities influencing the cardiovascular framework including heart, veins and arteries. Among the serious sicknesses, CVDs were viewed as the key offender of mortality, causing up to 30% of worldwide deaths constantly 2008. The on-going occurrence pace of morbidity and mortality brought about by CVDs were the principle purpose for concentrated investigates searching for intense drugs with less secondary effects.

Infectious diseases

The continuously increasing rates of infectious irresistible illnesses prompted a higher utilization of the industrially accessible anti-microbials, which brought about another moving peculiarity known as protection from antimicrobial specialists. Accordingly, researchers have set up new systems to foster antimicrobial medications with novel instruments of activity and lower frequency of bacterial opposition. Numerous analysts who researched the helpful significance of the restorative bloodsucker referred to that siphoning could be successful for the treatment of contamination without referencing more subtleties or data about siphon application conventions and the idea of the

*Corresponding author: Nizar Majeed, Department of Physiotherapy, Kutty University Tunku Abdul Rahman, Malaysia, Tel: 603589378965; E-mail: majeednizar@gmail.com

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dynamic part. For example, some revealed that siphon treatment was involved by customary dental specialists as a solution for dental contaminations like periodontitis and alveolar abscesses.

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