

SHORT COMMUNICATION

Different Types of Leeches for Medical Use in Surgery, Described by *Ibn al Quff* (630-685AH)

129

Abstract

Leech therapy was popular for many centuries. While many research studies have supported the medical use of *Hirudo medicinalis*, other species have not received that much attention. Due to the large demand and lack of supply, more research is needed to justify the medical use of other species. *Ibn al Quff* provided general guidelines on differentiating between the beneficial and toxic types of leeches.

In his manuscript *al-Oomdaa fi Senaatal-Jeraaha*, *Ibn al Quff* described the uses, as well as different types, of leeches. A copy of the manuscript was obtained from King Abdulaziz Public Library in Riyadh, Saudi Arabia (Arabic). I studied the manuscript and translated it to English.

Medical literature has proven that many leeches can be used with some efficacy. *Ibn al Quff* provided descriptions of the beneficial and toxic types of leeches.

Additional beneficial species of leeches that can be used in medicine have been described in the literature. *Ibn al Quff* described and differentiated the beneficial and harmful types available during his time. Additional scientific research is necessary to classify these leeches.

Keywords: leeches, hijama, cupping

Received: 7 Jan 2015; Accepted: 21 Jun 2015; Online published: 10 Aug 2015

Research on History of Medicine/ 2015 Aug; 4(3): 129-132

Mohammad Bukhetan
Alharbi¹

¹Assistant Professor of General Surgery,
Department of Surgery, Medical College,
Al Imam Mohammad Ibn Saud Islamic
University (IMSIU).

Correspondence:

Mohammad Bukhetan Alharbi,
Assistant Professor of General Surgery,
Department of Surgery, Medical College,
Al Imam Mohammad Ibn Saud Islamic
University (IMSIU)
mbharbi@imamu.edu.sa

Introduction

Bloodletting was known since ages. It was first known to be used by Egyptian for scarification. Hippocrates (460-370 BC) believed that human have four basic humors: blood, phlegm, black bile, yellow bile. Being ill means imbalance of the four humors. Therefore bloodletting, diuresis, purging, etc. can correct the imbalance.

Galen (129-200AD) focuses more on this type of therapy, and became more widespread.^{1,2}

Bloodletting, hijamah, was part of Islamic medicine and was mentioned by Prophet *Mohammad*. More elaboration on different types of bloodletting was done during the Islamic time.

Ibn al Quff, *abu al-Faraj* (630-685 AH), *Yagoob Ibn Ishaq*, named after his grandfather (*Ibn al Quff*), was born in Karak, Jordan. His father, a well-known figure in Arabic history, worked as a writer in Sarkhaad, in the Hooraan Mountains, in the days of King *AlnasserYousef Ibn Mohammad*. When his father travelled to Damascus to work in diwan, his son went with him.

Yagoob Ibn Ishaq studied in Sarkhaad with his teacher *Abi Usaa-beeah*, the author of *Ouyoon al-Anbaa in Tabaqaat al-Atebaa*. Then, he studied medical science under *Najmal-Deen Ibn al-Menfaakh* and *Moofaaq al-Deen Yagooub al-Sameri*, and read *Euclid* with *Moyaad al-Deen al-Aaradi*.

Once *Abu al-Faraj Yagoob Ibn Ishaq* had mastered his medical science training, he started treating patients in Damascus Castle, Ajloon Castle and Arak Castle.

He pioneered new methods of treating many diseases, and made several inventions. He also wrote three books: *Al-Oomdaafi Senaatal-Jeraaha*, in 1281(679 AH); *Al-Osool fi Sharhal-Fosool*, in 1284(684 AH); and *al-Shafifi al-Teb*, in 1272(670 AH).

Ibn al Quff, described bloodletting by leeches, but current literature does not provide sufficient information about different types of leeches available for medical use. *Ibn al Quff* has thoroughly described the discrimination between beneficial versus harmful types of them. However, one major limitation of using leeches for medical use like *Hirudo medicinalis*, is that the demand is more than the supply.

Methods

We studied two copies of his famous book, *Al-Oomdaafi Senaatal-Jeraaha*, which contains twenty chapters. We obtained one copy from the King *Abdul-Aziz* public library, Ri-

1. Greenstone, 2010: 12-4.
2. Parapia et al, 2008: 490-5.



Different Types of Leeches for Medical Use

yadh, Saudi Arabia and another copy online from a digital assets repository. There were negligible differences between the two versions.

Results

“I know that leeches, and the sucked blood substances are better than mahajim (cupping), but it is less effective than phlebotomy. However, it must not be used until the complete purification of the body from bad materials. Therefore, effusion of other materials to the affected part will occur.”

“There are two categories of leech: those that are toxic, and those that are free of toxicity. It is the second type that is used in therapeutics in medical practice.”

The first (toxic) category can be recognized by four factors:

- 1) They have large heads;
- 2) They are dark blue or black in colour;
- 3) They have flurry skin;
- 4) They have light green lines.

“A lot of the knowledge about this type of leech comes from the experience of doctors in India, who advise that these leeches can cause hypotension, excessive bleeding and hematomas.”

The second (non-toxic) category:

- 1) Those that live in very wet mossy areas;
- 2) Those that thrive on the mould found where frogs live;
- 3) Those that are the same colour as livestock;
- 4) Blond-coloured ones that live near roundworms;
- 5) Liver-coloured ones;
- 6) Those that look like yellow locusts;
- 7) Those that look like guilt exact mouse and have little heads;
- 8) Those with red bellies, the green coloured back.

Discussion

Medical literature discusses the benefits of leeches in detail.³ They can be used for relieving venous congestion⁴, osteoarthritis⁵, ischemic limbs and other conditions⁶.

Indications, contraindications, and complications of the use of medical leeches have been prescribed in some medical journals^{7,8}. The pharmacological properties of their saliva make leeches valuable for research.

Although some zoology books describe the different species of leech, more research is needed to elaborate about other species other than *Hirudineamedicinalis*, and their ability to have medicinal effects.

3. Abdulkader et al, 2013: 127-37.
4. Buote, 2014: 173-8.
5. Lauche et al, 2014: 63-72.
6. Whitaker et al, 2005: 155-60.
7. Pietrzak et al, 2012: 790-2.
8. Porshinsky et al, 2011: 65-71.



Other species which have been used for medicinal uses include, *Hirudinaria manillensis*, *Hirudo verbena*, *Hirudinaria nillensis*, *Macrobdeella decora*, and some others which have almost similar effects like those of *Hirudinea medicinalis*.

It is obvious that in many occasions differentiation between leeches and their effects will require advance laboratory studies for identification and taxonomy assessment.⁹

9. Kutschera et al, 2006: 9-13.

References

Abdualkader AM, Ghawi AM, Alaama M, Awang M, Merzouk A. Leech Therapeutic Applications. *Indian Journal of Pharmaceutical Sciences*. 2013;**75**(2):127-37.

Buote NJ. The use of medical leeches for venous conestion. *Veterinary and Comparative Orthopaedics and Traumatology*. 2014;**27**(3):173-8.

Greenstone G. The history of bloodletting. *BC Medical Journal*. 2010;**52**:12-4.

Kutschera U, Roth M. Notes on the ecology of the Asian medicinal leech *Hirudinaria manillensis* (Hirudinea: Hirudinidae). *Lauterbornia*. 2006;**56**:9-13.

Lauche R, Cramer H, Langhorst J, Dobos G. A Systematic Review and Meta-Analysis of Medical Leech Therapy for Osteoarthritis of the Knee. *Clinical Journal of Pain*. 2014;**30**(1):63-72.

Parapia LA. History of bloodletting by phlebotomy. *British journal of haematology*. 2008;**143**(4):490-5.

Pietrzak A, Kanitakis J, Tomasiewicz K, Wawrzycki B, Kozłowska-Loj J, Dybiec E, et al. Cutaneous complications of improper leech application. *Annals of Agricultural and Environmental Medicine*. 2012;**19**(4):790-2.

Porshinsky BS, Saha S, Grossman MD, Beery PR, Stawicki SPA. Clinical uses of the medicinal leech: A practical review. *Journal of Postgraduate Medicine*. 2011;**57**(1):65-71.

Whitaker IS, Cheung CK, Chahal CAA, Karoo ROS, Gulati A, Foo ITH. By what mechanism do leeches help to salvage ischaemic tissues? A review. *British Journal of Oral & Maxillofacial Surgery*. 2005;**43**(2):155-60.

