



Letter to the Editor

The prevention of cholera in the Bible



Dear Editor,

I read with great interest the article by Hsiao et al. [1] about the health economics of cholera and the cost-effectiveness of various cholera interventions. According to the authors, water, sanitation, and hygiene (WASH) infrastructure may be the more cost-effective solution for cholera control and prevention in the long-term when implemented properly. Since 1854 CE when Snow identified the water from the Broad Street pump as the source of the epidemic infection in Soho, London, it is known that cholera transmission is preventable through access to clean water, sanitation, and improved personal hygiene [2]. However, the importance of personal and environmental hygiene as preventive strategies for human health was highlighted, centuries before, in the Bible. For example, in the fifth book of the Old Testament, known as *Deuteronomy*, the Israelites received instruction from God to use a special part outside the camp for their physical needs, so that neither the place where they lived nor the water springs were contaminated. This instruction was recorded in *Deuteronomy* as follows: “You shall have a place outside the camp and you shall go out to it; and you shall have a stick with your weapons; and when you sit down outside, you shall dig a hole with it, and turn back and cover up your excrement. Because the LORD your God walks in the midst of your camp, to save you and to give up your enemies before you, therefore your camp must be holy, that he may not see anything indecent among you, and turn away from you” (*Deuteronomy* 23:12–14). Undoubtedly, this directive from God protected the Israelites from diseases transmitted through the fecal-oral route by water and food, such as cholera, although they did not know about the existence of microbes and viruses at that time. Moreover, washing the body played a crucial role in the life of the Israelites, considering that it was compulsory, and in many circumstances had been established as a means of purification (see *Leviticus* 15:1–33; *Deuteronomy* 23:11–12; *Numbers* 19:19). In my opinion, these instructions on physical cleanliness and sanitation, such as *Provisions for clean and unclean of the Mosaic Law* (see *Leviticus* 11:1–15:33), were essentially hygiene rules imposed by the social and cultural circumstances of that time and were invested with religious authority [3].

It is unknown if cholera with the modern meaning of the term [2] existed in Biblical times. If cholera existed, it certainly would fit under the heading of *pestilence* [Hebrew word: *deber*], a term frequently used in the Bible (see e.g., *Exodus* 5:3 9:3 9:15; *Leviticus* 26:25; *Numbers* 14:12; *Deuteronomy* 28:21; 2 *Samuel* 24:13 24:15; 1 *Kings* 8:37; 1 *Chronicles* 21:12 21:14; 2 *Chronicles* 6:28

7:13 20:9; *Jeremiah* 14:12 21:6.7.9 24:10 27:8.13 28:8, etc). We point out that the term “cholera” (Greek word: “*χολέραν*”) in the Old Testament (only Septuagint) refers to gastrointestinal (digestive) disorders caused by polyphagia (excessive food intake) (see *Wisdom of Sirach* 31:20; 37:30). Also, according to the Septuagint, the Israelites died in the Wilderness of Paran from “cholera” which had been announced as an upcoming Divine punishment for the gastronomically lustful Israelites (see *Numbers* 11:20; *Psalms* 78:29). In my view, the “*very great plague*” (*Numbers* 11:33) that afflicted the Israelites in the Wilderness of Paran was a food borne illness, which was caused by bacteria growing in fresh or incompletely cooked meats (quails) and which caused symptoms of acute gastroenteritis (“*χολέραν*”) [4]. It is, of course, expected that excessive intake of an infected food would cause a faster onset of the symptoms and complications of the food borne disease due to the entry of a higher load of an infectious agent into the human organism.

Declaration of interest

None

References

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