



Case Report

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Observational Case Studies on Effect of Phage-laden Ganga water on Dyspepsia and Diabetes Patients

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ABSTRACT

12 patients of dyspepsia and diabetes were administered phage-laden Ganga water orally. Of these, the results of 3 patients who took Ganga water in the two rounds continuously indicate substantial and sustained benefit.

Keywords: Dyspepsia, Diabetes, Phage, Ganga.

INTRODUCTION

The first tests on the use of phages for treating bacterial infections were performed at the Baylor University of Medicine in Texas in 1923 [1]. Górski *et al.* have reported that anti-bacterial action of phage offers the best perspectives for therapeutic application [2]. A bacteriophage taken from a local pond was used to treat a life-threatening bacterial infection in an 80-year-old man's chest [3]. These studies indicate that phages can act against pathogenic bacteria in the human body.

Bacteriophages may favorably manipulate the microflora of the intestinal tract because of their high specificity. While bacteria-based probiotics introduce nonpathogenic bacteria into the GI tract, the phage-based probiotics targets and kills specific pathogenic bacteria in the GI tract [4].

The Institute of Microbial Technology has reported that Ganga water has a variety of different phages that have specific bactericidal activity against clinical isolates and pathogens like *Mycobacterium*, *Streptococcus*, *Pseudomonas*, *Yersinia*, *Salmonella*, *Staphylococcus*, *Klebsiella*, *Vibrio*, *Shigella*, *Clostridium*, *Acinetobacter*, *Erwinia*, *Aeromonas*, *Escherichia*, *Cronobacter*, *Enterobacteria*, and *Campylobacter* etc [5]. These studies give us a reason to explore the use of phages in Ganga water for curative purposes.

If the Ganga water has large numbers and isolates of phages; and if the phages can kill pathogenic gut bacteria and help improve the immune response of the human body, then administering Ganga water can enhance immune response, hence this study.

CASE REPORT

The specific objective of this study was to generate evidences for the beneficial effect of Ganga water on dyspepsia and build hypotheses to test with subsequent experimental studies [6].

Ganga Water was administered orally to 13 patients suffering from gastro diseases, like indigestion, chronic acidity, or abdominal bloating or fullness. Patients were informed that they were being given Ganga water in addition to the prescription medicines in an experimental study. Clearance from an ethics committee was not required for an observational study.

The Protocol for intake of Ganga water was as follows:

1. Take two tea-spoon (10 ml) Ganga water three times daily 15-20 mins before or after taking food in empty stomach.
2. Initially swish it in the mouth for 5-10 seconds, then do oral breathing keeping Ganga water in mouth, and finally swallow it.
3. Avoid taking any hot liquid (tea, coffee, soup) immediately after taking Ganga water.

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All patients were located in Gorakhpur, UP. The first phase of administration of Ganga water was of 2 weeks. This was followed by a period of rest for 2 weeks. The second phase of administration of Ganga water was of 1 month followed by rest of 1 month. Data was recorded at the end of each phase.

All patients of the physician suffering from dyspepsia were selected for the study. Inclusion criteria was that of gastro-intestinal disease. Exclusion criteria was child less than 16 years, pregnant women, and neurosis. Patients were assessed according to improvement in their digestive symptoms like acidity, bloating, digestion and bowel movement.

Dyspepsia was evaluated by in-person interviews or, if that was not possible due to Covid-19 Pandemic, by telephonic assessment. A potential bias is that patients who were previously positively disposed towards the medicinal value of Ganga water may have benefited from the placebo effect. The study size was determined by the total number of dyspepsia patients that came to the physician for treatment.

The results were scored on 1-10 Likert Scale as per the assessment of the medical practitioner. Here, "1" represented present condition and "10" represented best outcome. Results were recorded in four phases:

Phase I: Ganga Water was administered. Change before-and-after was recorded.

Phase II: Ganga Water was stopped. Change before-and-after was recorded.

Phase III: Ganga Water was administered again. Change before-and-after was recorded.

Phase IV: Status was recorded 4 weeks after stoppage of treatment.

Total 12 patients were included in the study initially. Of these, 9 patients took Ganga water during Phase I and did not continue in the Phase III. Credible information is not available on whether they took intermittently or regularly during Phase I and II. Among these 9, seven reported no benefit at the end of Phase I; one did not report back; and one reported much benefit at the end of Phase I but retracted later saying that he felt the benefit he reported during Phase I was due to the prescription medicines; and not due to Ganga water. These 9 cases have been excluded from the results. The results of three patients who have taken Ganga water during Phase I and III continuously are given in the Table 1.

Table 1: Results of three patients who have taken Ganga water during Phase I and III

S. No.	Age	Disease	Prescription Medicines	Phase I: Oral Intake 2 weeks.	Phase II: Rest 2 weeks.	Phase III: Oral Intake 1 month.	Phase IV: Rest 1 month.
1	55 Yrs. Female	<i>The patient was suffering from Hypertension, Diabetes Mellitus and Chronic Dyspepsia. Blood sugar (random) 200.</i>	Tab Telmisartan 40 mg + hydrochlorothiazide 12.5 mg, once daily after breakfast. Tab glimepiride 2 mg+ metformin 500 mg once daily before breakfast.	The patient reported improvement of 1-2 on scale of 1-10 in dyspepsia. Blood sugar (random) 180.	The morbidity relapsed to pre-treatment level with no improvement in dyspepsia. Blood sugar (random) 160.	The improvement came back to the previous level 1-2 on a scale of 1-10 in dyspepsia. Blood sugar (random) 158.	Patient remains at the level at the end of Phase 3. There is no relapse. Blood sugar (random) 156.
2	62 Yrs. Female.	<i>The patient was suffering from Diabetes Mellitus, dyspepsia and swelling in the feet. Blood sugar (random) 215.</i>	Tab Glimepiride 2mg+ Metformin 500 mg + Pioglitazone 15 mg two times daily before breakfast and dinner.	The patient reported improvement of 4-5 on scale of 1-10 in dyspepsia. Blood sugar (random) 201.	The morbidity relapsed to 1-2 from the previous level of 4-5. Blood sugar (random) 195.	The improvement was reported at 5-6 on a scale of 1-10 in dyspepsia. Swelling in feet reduced. Blood sugar (random) 176.	Improvement in dyspepsia and swelling of legs is maintained at the level at the end of Phase 3. Blood sugar (random) 168
3	63 Yrs. Female	<i>The patient was suffering from Hypothyroid, Diabetes Mellitus and Chronic Dyspepsia. Blood sugar (fasting) 145.</i>	Tab Thyroxine 75 mg once daily in empty stomach Tab Metformin 500 mg two times daily.	The patient reported improvement in constipation of 2-3 on scale of 1-10. Blood sugar (fasting) 137	The morbidity relapsed to pre-treatment level with no improvement. Blood sugar (fasting) 137	Improvement was reported at 5-6 on a scale of 1-10 in dyspepsia. Blood sugar (fasting) 130.	Dyspepsia has relapsed by 10-20 percent at the end of Phase 3. Blood sugar (fasting) 124.

DISCUSSION

The lack of interest among the 9 patients who did not continue to take Ganga water in Phase III could be due to nil- or inadequate impact of Ganga water which, in turn, could be due to non-adherence to the prescribed protocol.

The results of the three patients who continued to take Ganga water in Phase III show sustained benefit.

On dyspepsia, at the end of Phase II of 2 weeks of rest, two patients reported relapse to the pre-Phase I stage, and one reported relapse from 4-5 to 1-2 on the Likert scale.

At the end of Phase III of intake of Ganga water for 1 month, one patient reported improvement to 1-2 on a scale of 1-10, and two reported improvement to 5-6 on a scale of 1-10. At the end of Phase IV of 1 month of rest, two patients reported maintaining the

improvements obtained at the end of Phase III; while one patient reported relapse by 10-20 percent.

On diabetes, all three patients report continuous and gradual reduction in blood sugar level. Further, the reduction in blood sugar level has continued in Phase IV when intake of Ganga water was stopped. This indicates a lag in the effect of Ganga water.

CONCLUSION

The evidence suggests a positive effect of Ganga water on dyspepsia provided intake is taken for at least 1 month; and positive effect on blood sugar level even if intake was for 2 weeks. The positive effect is sustained after stoppage of intake of Ganga water.

Limitations of the study are one, the confounding effect of normal prescription medicines is not isolated. Two, the sample size was small. Three, only one protocol was adopted. It is necessary to try different protocols and arrive at the most robust protocol.

Conclusion is that Ganga water therapy holds much potential for the treatment of dyspepsia and diabetes.

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Conflict of Interest

None declared.

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REFERENCES

1. Ho K. Bacteriophage therapy for bacterial infections: rekindling a memory from the pre-antibiotics era. *Perspectives in Biology and Medicine*. 2001;44(1):1-6.
2. Górski A, Bollyky PL, Przybylski M, Borysowski J, Międzybrodzki R, Jończyk-Matysiak E, Weber-Dąbrowska B. Perspectives of phage therapy in non-bacterial infections. *Frontiers in Microbiology*. 2019;9:3306.
3. UC San Diego Health. Bacteriophages in Nature. <http://health.ucsd.edu/news/topics/phage-therapy/pages/phage-101.aspx>, Retrieved on December 20, 2020.
4. Haziyamin T, Yusuf MA, Jaichwan S. 3rd International Conference and Exhibition on Probiotics, Functional & Baby Foods. 2014.
5. Institute of Microbial Technology. Gangiomics: Unravelling the Unseen Phage Diversity in the Sediments of the Holy River Ganges through metagenomic approach. 2018.
6. Sessler DI, Imrey PB. Clinical research methodology 2: observational clinical research. *Anesthesia & Analgesia*. 2015;121(4):1043-51.

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