WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 9, Issue 4, 1267-1270. Research Article ISSN 2277– 7105

INVITRO ANTACID ACTIVITY OF *COCOS NUCIFERA* WATER

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Article Received on
09 Feb. 2020,

Revised on 01 March 2020,
Accepted on 22 March 2020

DOI: 10.20959/wjpr20204-17152

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ABSTRACT

Aim: The purpose of the present study is to rule out the antacid activity of different concentrations of *Cocos nucifer*a water by using rosette rice method. **Method:** In this different concentration of *Cocos nucifer*a has been prepare and attempted to record the pH profile during acid neutralization reaction. Sodium bicarbonate is used as a standard drug. **Results:** The antacid activity was low for *Cocos nucifer*a when compared to the standard sodium bicarbonate.

KEYWORDS: Antacid, *Cocos nucifer*a, sodium bicarbonate, pH, Rosette rice.

INTRODUCTION

Hyperacidity is one of the most common disease seen in the society. Hyperacidity refers to a set of symptoms caused by an imbalance between the acid secreting mechanism of the stomach, proximal intestine and the protective mechanisms that ensure their safety. The stomach normally secretes acid that is essential in the digestive process. When there is excess production of acid in the stomach, it resuts in the condition known as hyperacidity or acidity.[1] An antacid is a substance which neutralizes stomach acidity and is used to relieve heartburn, indigestion etc.[2]

The *Cocos nucifer*a (coconut) is an important fruit tree in the tropical regions and the fruit can be made into a variety of foods and beverages. The edible part of the coconut fruit is the endosperm tissue.[3] Initially, the endosperm is a liquid containing free nuclei generated by a process, in which the primary endosperm nucleus undergoes several cycles of division. At

first, the cellular endosperm is translucent and jelly like but it later hardens at maturity to become white flesh. Unlike the endosperms of other plants, the cellularization process in a coconut fruit doesnot fill up the entire embryo sac cavity, but instead leaves the cavity solution filled. This solution is commonly known as coconut water.[4] Coconut water contains water, carbohydrates, proteins, fat, vitamins, minerals.[5] The high water content may help to suppress acute symptoms of acid reflux by temporarily raising stomach pH.

The consumption of certain alkalizing vegetables, fruits, milk products etc has been known to alleviate hyper acidity but by their chemical composition they should help in recovering from stomach ulcer. Therefore, natural foods have generated increasing interest for the treatment of acidity.[6]

MATERIALS AND METHODS

Preparation of different concentration of *Cocos nucifer*a water

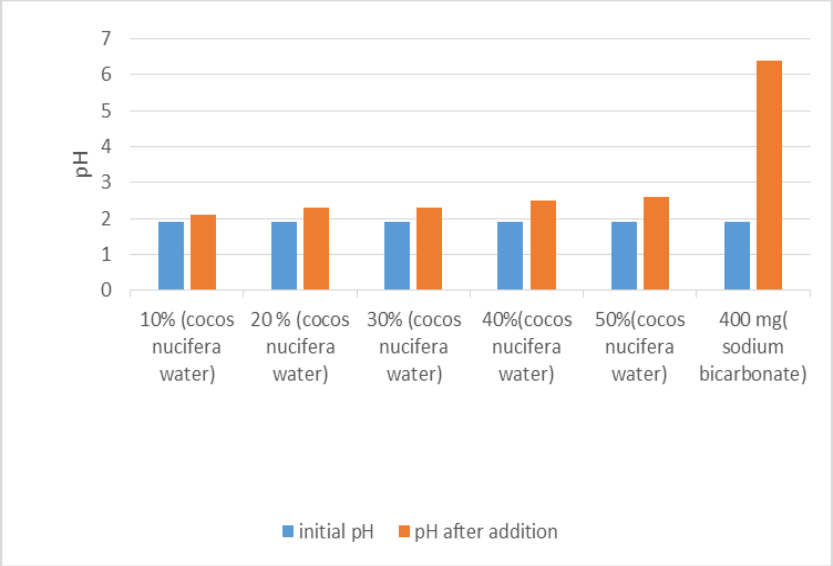
Fresh water from *Cocos nucifer*a has been collected. By using water as a solvent different concentration of *Cocos nucifer*a water i.e 10 %, 20%, 30%, 40 % and 50% has been prepared.

Determination of antacid activity by Rosette Rice method

The rosette rice time attempted to stimulate the stomach, and record the pH profile during acid neutralization reaction. The pH profile during acid neutralization reaction was followed by adding 70ml of 0.1 N Hcl and 30 ml water, to a 500 ml reaction beaker. When the temperature was maintained at 37°C, different concentrations of *Cocos nucifer*a water and standard (sodium bicarbonate (400 mg)) were added into the reaction beaker under continuous magnetic stirring. Then 0.1 N Hcl was continuously added at a rate of 2ml/min from the burette. A pH meter was attached to the reacting vessel to record pH during the neutralization reaction. The time taken to reach pH 3 and rosette rice time i.e the time during which pH maintained between pH3 and pH5 was noted.[7]

RESULTS

	Initial pH	Ph After Addition	Antacid Activity
10% (cocos nucifera water)	1.9	2.1	low antacid activity
20 % (cocos nucifera water)	1.9	2.3	low antacid activity
30% (cocos nucifera water)	1.9	2.3	low antacid activity
40%(cocos nucifera water)	1.9	2.5	low antacid activity
50%(cocos nucifera water)	1.9	2.6	low antacid activity
400 mg(sodium bicarbonate)	1.9	6.4	4 min



DISCUSSION

In the present study investigation was conducted on evaluation of invitro antacid activity of *Cocos nucifer*a water by rosette rice method. The composition of *Cocos nucifer*a water include water, fiber, minerals, fat, carbohydrates, proteins etc. Eventhough water is the major composition which had the ability to neutralize the acid. By the table 1 we can conclude that *Cocos nucifer*a has low antacid activity i.e (10% -2.1 pH, 20% -2.3 pH, 30%- 2.3 pH, 40%-2.5 pH and 50%-2.6 pH), whereas the standard drug (sodium bicarbonate-400 mg- 6.4 pH) possess good antacid activity i.e 4 min.

CONCLUSION

Thus it can concluded that eventhough *Cocos nucifer*a water has good composition of water, fiber it has low antacid activity when compared to standard (sodium bicarbonate).

REFERENCES

1. Central Council for Research in Ayurvedic sciences. “FAQ on Common Diseases (Hyperacidity)”
2. Internal Clinical Guidelines Team. (UK). Dyspepsia and Gastro-Oesophageal Reflux Disease: Investigation and Management of Dyspepsia, Symptoms Suggestive of Gastro-Oesophageal Reflux Disease, or Both. National Institute for Health and Care Excellence: Clinical Guidelines. London: National Institute for Health and Care Excellence (UK)., 2014. PMID 25340236
3. Lopes, M.A.; Larkins B.A. Endosperm origin, development and function. Plant cell., 1993; 5: 1383–1399.

4. Janick, J.; Paull, R.E. The Encyclopedia of Fruit & Nuts; CAB International: Wallingford, UK, 2008; 112.
5. https://coconuthandbook.tetrapak.com/chapter/chemistry-coconut-water
6. A comparative study of the antacid effect of some commonly consumed foods for hyperacidity in an arificial stomach model.
7. Gainotti Alessandro et al, the effect of residual water on antacid properties of sucralfate gel dried by microwaves AAPS pharmsci tech, 2006; 7(1): E1-E2.