

Excessive consumption of green tea and its effect on kidney tissue in rabbits

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ABSTRACT

Design this study for detection effect of Excessive green tea on kidney's rabbit . Ten local rabbits were used after one month of dosage . a treatment group(6 rabbit) that is orally injected with green tea (20 ml) / gm. Daily(Four times a day) for one month . histological study was an accomplished for kidney . histological toxic was very clear in our sample by effect on renal tubular of thickness of bowman capsule and The removal of epithelial cells in the renal tubes and the accumulation of inflammatory cells, which showed vascular degeneration, was also observed.

KEYWORDS: *Green tea; kidney tissue; Rabbits.*

I. INTRODUCTION

Green tea is a vital medical herb that activates a bioactive effect against Many diseases The use of green tea, which began in the Chinese mainland more than 74 centuries ago, has been explored [1]. In the past, green tea was used to control bleeding, heal wounds, aid digestion, improve heart health and regulate body temperature. This was evident in traditional Chinese and Indian medicine.

By chance, the development and use of the health side has been developed Many people have focused on green tea For the purpose of health care and pain reduction Improve metabolism, reduce stress and strengthen my immune system [2]. *Camellia sinensis* is the scientific name for green tea, which has been widely cultivated in tropical and subtropical areas such as India and Sri Lanka. It is an evergreen plant that is shaped like a small tree with roots and a strong bearing [3].

Green tea contains effective chemical compounds In addition to the presence of essential oils, which is estimated at 500 species Which Contributes to flavor and taste and varies according to the area in which it is grown In addition to the presence of proteins and carbohydrates The green tea contains [4]. High antioxidant efficacy ex. the polyphenols So the ingredients became effective in green tea World attention center

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The marked decline in disease People have consumed green tea It is also anti-obesity As it increases metabolic rate in the body Which increases its ability to burn fat It can burn about 70 calories a day [5,6].

About 30% of the weight of green tea is polyphenol and also large amounts of catechins(EGCG), which are a natural anti-oxidant that helps prevent cell damage .It also has a high effectiveness in preventing the formation of free radicals in the body, and EGCG may be one of the main reasons that green tea possesses these strong medicinal properties .It also contains small amounts of healthy minerals [7,8].

Recently research has shown the positive effects of green tea on weight loss, liver disorder, type 2 diabetes and Alzheimer's disease [3,9]. Green tea has great medical significance, which has been confirmed by many studies.

It was also found that in countries where cancer rates tend to decline, consumption of green tea is high, but it has not been scientifically proven whether green tea is the one that prevents cancer in these areas [10]. On the other hand , A study was conducted on about 40,000 Japanese volunteers, whose ages ranged between 40 to 79 years, indicating that green tea consumption was associated with a lower death rate and contributed to the treatment of cardiovascular diseases[11,12].

Although green tea promoted weight loss in obese adults, it is not likely to be clinically important for weight loss [13,14]. One of the contraindications to drinking green tea is a few side effects, such as an allergy to caffeine, which may cause insomnia, upset stomach, and nausea [15].

Also, you should beware of drinking green tea in people who take anticoagulants, such as Coumadin and warfarin, because of its vitamin K content, which interferes with the action of these medicines, and also those who take aspirin because it reduces the effectiveness of thrombolytic thrombosis [16]. It causes anemia Because it absorbs a large amount of iron It also has a large amount of calcium especially in females Which helps accumulate kidney stones [17]. It can increase blood pressure and heart rate if taken with stimulant medications [18].

II. MATERIALS & METHODS

Plant samples: Obtained from the local markets in the city. In powder form of dried leaves kept inside laminated bags Indian tea was origin

Method of water extract

followed the method Harborne[19] by soaking the tea powder and leave it for 24 hours and then filtered the next day with a piece of cloth, then heat it to 40-50 ° C and leave to cool and run again and add to drinking water and concentration.

Experiment animals

The study was conducted on 10 local rabbits whose weights ranged from 1300-1500 g and their ages from 7-9 month Placed in cages prepared for the purpose of study taking care of the cleanliness of cages and sterilized from time to time. Under controlled conditions of ventilation and temperature (22-25) ° C [20].

Design Experience

Rabbits were randomly divided into two groups of control groups(4rabbit) was provided with green feed(Alfalfa) and water without any additives And a treatment group(6 rabbit) that is orally injected with green tea (20 ml) / gm. Daily(Four times a day) for one month [9].

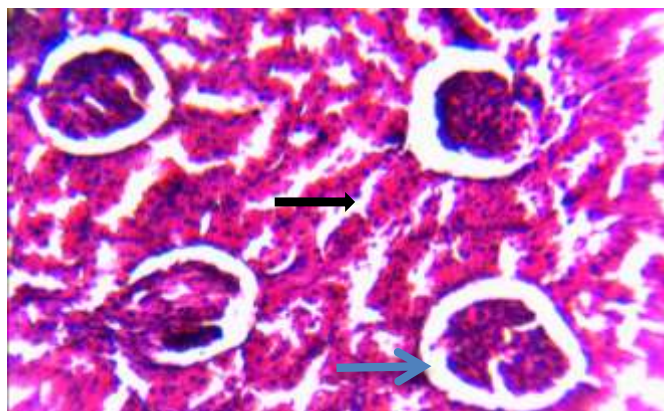
Histological examination

Rabbits were anesthetized using chloroform by inhalation After anesthesia was confirmed, a longitudinal incision was made in the middle of the animal and samples were taken Formal containers were placed in formal containers for 48 hours Then washed with water and then I passed through progressive concentrations of alcohol To get rid of water by dehydration and then the process of clearing using Xylene The samples were then embedded with paraffin wax and cut into slices with a thickness of 5 micrometers They were dyed with haematoxylin and eosin and were examined by microscope.

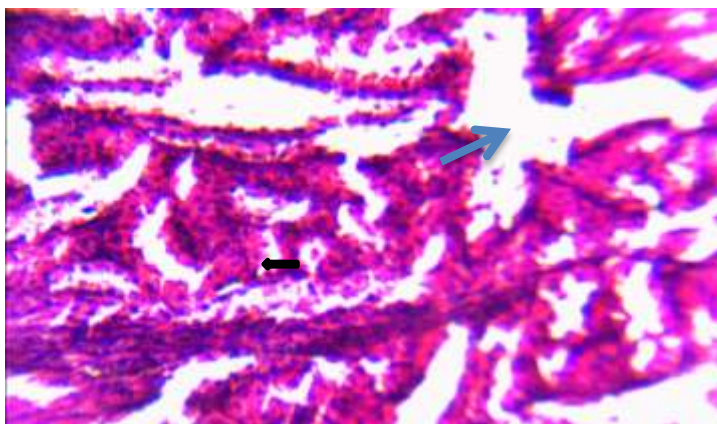
III. RESULTS

The results of the histological examination in the control group showed that the kidneys are made up of uriniferous tubules, which spread among the glomeruli with their known structure without any changes (image 1).

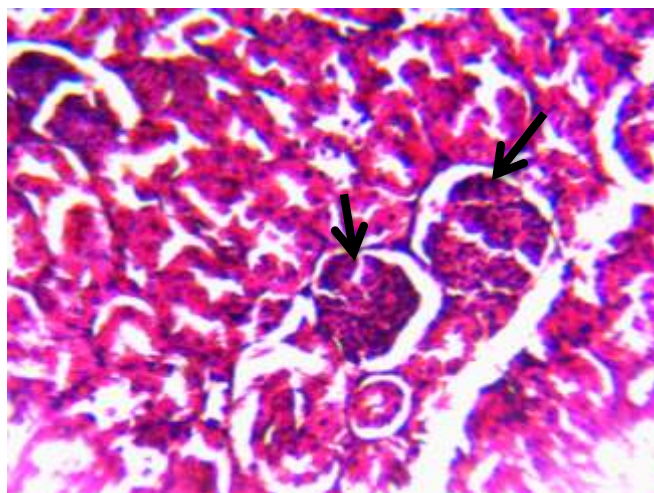
The treatment group was observed necrosis and degeneration in the walls of the tubules and thickening in the Bowman bag with infiltration of inflammatory cells. Congestion of the epithelial tissue of renal tubules (image 2,3,4).



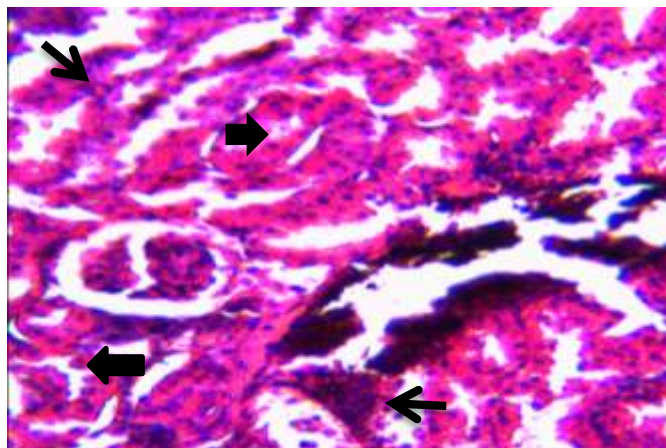
(Image 1) section in Kidney of rabbits after 30 days treated with green tea. showing normal glomeruli (), normal renal tubules (), (H&E, 400X).



(image 2) section of kidney showing cellular degeneration, () dilatation of renal tubule (),(H & E 200X).



(Image 3) section of kidney showing increased thickness of Bowman's capsule () (H & E 400X).



(image 4) section of kidney showing aggregation of inflammatory cells (), vascular degeneration and sloughing of epithelial lining of the renal tubule (—), (H & E 400X).

IV. DISCUSSION

The cause of these histological changes may be due to the containment of green tea on aluminum metal, which studies indicate that accumulation in the body causes toxicity and this causes kidney problems and high doses may cause death [21,22]. Histological toxicity appears in the form of cellular degeneration accompanied by an infiltration of inflammatory cells [21,23]

This is because kidneys are the second target after the liver to collect toxic substances [4,24].

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