Journal of Nutrition & Food Sciences
ISSN: 2155-9600

Christopher, J Nutr Food Sci 2016, 6:2
DOI: 10.4172/2155-9600.1000469

Letter to Editor Open Access

Herbal Diuretics

Christopher IW*

Red Pharm, Cold Meece Estate, Cold Meece, Staffordshire, ST15 0SP, UK

***Corresponding author:** Christopher IW, Red Pharm, Cold Meece Estate, Cold Meece, Staffordshire, ST15 0SP, United Kingdom, Tel: 4407967230155; E-mail: RedPharm@outlook.com

Rec Date: Feb 16, 2016; **Pub Date:** Feb 17, 2016; **Acc Date:** Feb 26, 2016

Keywords: Herbal; Diuretic; Hypertension; Cardiovascular; Sodium

Editor

I would like to challenge your readership to read 'Herbal medicines as diuretics: A review of the scientific evidence' [1] which is extremely well read and cited since being published, suggesting that in the age when healthcare costs are increasing, there may be a place for herbals as a first-line or adjunct therapy in the management of hypertension. But, at the present time, more research and data is still needed to demonstrate the effect of herbals in controlled interventional trials.

The World Health Federation (see www.world-heart-federation.org) state that worldwide there are around 970 million people with hypertension (i.e., elevated blood pressure) and the World Health Organization considers this to be one of the most important causes of premature death. Indeed, by 2025, it is estimated that 1.6 billion adults will be living with hypertension.

There are a number of therapies that can be used clinically to manage hypertension. These include the use of angiotensin converting enzyme inhibitors, beta blockers, calcium channel blockers and diuretics. This latter class work by increasing the excretion from the body of urine and sodium in urine. The review 'Herbal medicines as diuretics: A review of the scientific evidence' [1] assesses the studies reporting diuretic effects with traditional / herbal medicines as it was unclear which plant extracts actually had an effect similar to those used in clinical practice. A literature search was conducted to: (1) capture the pool of studies performed in this area; (2) identify which extracts had been reported in the studies identified; (3) determine the effect of these extracts on urinary volume and urinary sodium excretion. From this it was possible to assess the support for specific extracts and to recommend potential candidates for future research and potential use.

A search of Medline was conducted and studies identified were graded according to the results reported. The Medline search included all English language articles published containing the following terms: natriuresis, natriuretic, diuresis, diuretic, aquaretic and urinary flow. These were combined with the following search terms: food, herb, botanical, nutrient and extract. The plants identified were then confirmed using http://www.ipni.org. None traditional extracts, e.g., caffeine and polyherbal preparation Jawarish Zarooni Sada, were excluded, as were vitamins and minerals.

Seventy-seven articles were identified and reviewed; however, of more note is the fact that only nine of these were conducted in human intervention trials. Table 1 summarizes these studies by extract and also includes the study design and the responses in terms of urinary volume and urinary sodium excretion. Other studies were also highlighted, as they are supporting evidence, with 13 studies identified in anaesthetised animals and 55 studies in conscious animals.

Scientific name	Dose	Study (design/R/PL/n)	Duration	UV	UNa
Equisetum bogotense	0.75 g	CO/N/N/n = 25	2 d	↑	↑
Phyllanthus amarus	5g	P/N/N/n = 7	10 d	↑	↑
Withania somnifera	3g d^{-1}	P/N/N/n = 12	30 d	↑	↑
Vicia faba	40 g	P/N/N/n = 12	3 h	NM	↑
Hibiscus sabdariffa	10 g	P/Y/N/n = 45	4 wk	NM	↑
Alpinia speciosa	0.8 g 100 ml^{-1}	CO/N/Y/n = 10	6 h	↑	→
Aerva lanata (leaf; flower; stem)	200 ml of 50–100 g l^{-1}	P/N/N/n = U	1.5 h	↑	NM
Coriandrum sativum	200 ml of 50 g l^{-1}	P/N/N/n = U	1.5 h	→	NM
Aerva lanata (leaf; flower; stem)	200 ml decoction	CO/Y/Y/n = 14	10 h	→	→
Elephantopus scaber	7.5 g 100 ml^{-1}	CO/Y/Y/n = 14	10 h	→	→
Imperata cylindrica (IC)	50 g	CO/Y/Y/n = 40	1 d	→	→
Orthosiphon stamineus (OS)	10 g	CO/Y/Y/n = 40	1 d	→	→
Plantago major (PM)	20 g	CO/Y/Y/n = 40	1 d	→	→

Zea mays (ZM)	40 g	CO/Y/Y/n = 40	1 d	→	→
Mix of IC, OS, PM, ZM	120 g ZM, 50 g IC, 20 g PM	CO/Y/Y/n = 40	1 d	→	→

Table 1: Summary of the studies reported in humans and responses in terms of urinary volume (UV) and urinary sodium (UNa) excretion. Notes: i. Study refers to the design (P, parallel; CO, cross-over), whether the study was randomised (R?), whether a placebo control group (PL?) was included (simply yes [Y] or no [N]) and the population size (n). ii. Duration is shown in hours (h), days (d) and weeks (wk). iii. Dosage is shown when it was reported. iv. Other abbreviations: U, unclear; '↑' and '↓' represent significant increases and decreases, respectively; '→', represents no change; and, 'NM', indicates when a parameter was not measured.

Focusing on the human trials, three were only three studies reporting concurrent increases in urinary volume and urinary sodium excretion. These were *Equisetum bogotense* (more commonly known as Andean Horsetail), *Phyllanthus amarus* (black catnip, child pick-a-back, bhuiamla, gulf leaf flower, meniran, chanca piedra, shatterstone, stone breaker, quebra pedra, bahupatra, gale of wind, carry me seed, hsieh hsia chu) and *Withania somnifera* (Winter cherry, ashwagandha).

Equisetum is a genus of perennial plants that reproduce by spores rather than seeds. These plants normally grow to between 0.2 and 1.5 m high, although some reach more considerable heights. In terms of ethnobiology, this species is used in Chile and Mexico as a traditional means of treating kidney stones. Other reported uses also include cleansing teeth and as a means of sedating platelets.

The *Phyllanthus* species is suggested to be made up of some 750 species and includes trees, bushes, and annual or biennial herbs. *Phyllanthus amarus* is an annual, glabrous herb that grows to between 30 and 60 cm, has stems that are angular with distichously, elliptic-oblong shaped leaves and its flowers are yellow and numerous. Its fruits are capsule shaped, very small and smooth and its seeds are longitudinally ribbed on the back. Traditional uses reportedly include the treatment of urolithiasis, ethnobotanical use as an anti-hypertensive, an analgesic, a treatment for liver diseases, an anti-viral agent, a laxative and an anti-septic.

The family Solanaceae, to which *Withania somnifera*, belongs, is in the major group flowering plants. WebMD (www.webmed.com) reports that its common uses include arthritis, anxiety, trouble sleeping (insomnia), tumours, tuberculosis, asthma, a skin condition marked by white patchiness (leukoderma), skin wounds, bronchitis, backache, fibromyalgia, menstrual problems, hiccups, and chronic liver disease. As well as a so-called 'adaptogen' (to help cope with day-today stresses), to improve mental capacity, as an anti-inflammatory to alleviate pain and swelling, as an anti-ageing extract, to aid fertility and even one-sided paralysis (hemiplegia).

Conclusion

In total, more than one hundred extracts were found to report the use of herbal diuretics. Of those in human trials, three were found to show effects on both urinary volume extraction and urinary sodium excretion. These were *Equisetum bogotense*, *Phyllanthus amarus* and *Withania somnifera*. The strongest evidence, of these three extracts, was for *Equisetum bogotense* and this was based on two or more trails. Indeed, promising effects were seen in the human trial by Lemus et al. [2] and a study in conscious animals by Perez Gutierrez et al. [3]. Of course more studies in humans are required in order to assess and compare the most effective candidates. The impact of doing this is to offer a natural option to current clinical therapies. This would potentially have cost advantages, as these extracts are naturally occurring. They may also have fewer side effects, which could be a benefit to patients with chronic progressive diseases. And, may be used as a first-line/milder therapy or even as an adjunct therapy if a small additive effect was required to achieve a target blood pressure.

Acknowledgement

The author would like to acknowledge the writing support provided by Red Pharm communications, which is part of the Red Pharm company (please see @RedPharmCo on Twitter).

References

1. Wright CI, Van-Buren L, Kroner CI, Koning MMG (2007) Herbal medicines as diuretics: A review of the scientific evidence. J Ethnopharmacolo 114: 1-31.
2. Lemus I, Garcia R, Erazo S, Pena R, Parada M, et al. (1996) Diuretic activity of an Equisetum bogotense tea (Platero herb): evaluation in healthy volunteers. J Ethnopharmacol 54: 55-58.
3. Perez Gutierrez RM, Laguna GY, Walkowski A (1985) Diuretic activity of Mexican Equisetum. J Ethnopharmacol 14: 269-272.