

## Pilot Study

# Potassium Treatment for Premenstrual Syndrome

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- Premenstrual syndrome
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## Abstract

Premenstrual syndrome (PMS) is a cyclical disorder experienced by reproductive age women during the luteal phase of the menstrual cycle. Various hypotheses for its causation have been entertained but all have shortcomings. PMS can be disabling. Symptoms affect interpersonal relations, may elicit intimate partner violence and even criminal conduct. Current treatments are life style advice, cognitive behavioral therapy, and a variety of drugs, some off label and some considered complementary. This pilot study used potassium supplementation and showed good results despite a disparity between serum levels and intracellular levels of potassium. We recommend trials of potassium for PMS.

## INTRODUCTION

PMS affects large numbers of women of reproductive age. The prevalence varies from study to study, but ranges from 8% to 15% [1] and a high prevalence has been recorded in Nigeria [2]. The physical and emotional symptoms characterizing this syndrome occur in the luteal phase of the menstrual cycle and significantly impact quality of life [3,4]. PMS can be a vulnerability factor in violence against women [5], and has been associated with hypertension [6,7]. Drugs suppressing oestrogen and progesterone help some women with PMS, but those experiencing severe depression find such drugs ineffective [8]. Selective Serotonin Receptor Inhibitors (SSRI) and cognitive behavioral therapy (CBT) work for some [9]. Complementary treatments such as Thiamine and Riboflavin have been shown to attenuate the risk of PMS [10].

Takacs, based on Reeves [11], and on the observation that PMS and potassium deficiency shared common symptoms, has made a case for the off label use of potassium supplements [12]. She found that potassium supplementation over 3-4 menstrual cycles was effective. Potassium is an important electrolyte involved in cell metabolism virtually in every life process. It is largely intracellular and has been known to play a significant role in optimal production of progesterone in response to luteinizing hormone [12]. However conflicting results regarding potassium exist, with some studies suggesting that women with higher potassium intake are at higher risk for PMS [13]. This controversy prompted us to conduct our own study,

## MATERIALS AND METHODS

We prescribed Slow K (Potassium Chloride) 600 mg daily to 11 patients with PMS attending our hypertension clinic who gave informed consent to the trial.

## RESULTS

Ten of the 11 patients were in their 5<sup>th</sup> decade of life. Only one had serum potassium below the normal range on pretrial testing. Six had previously suffered adverse reactions to drugs. Eight reported that their PMS symptoms had cleared.

## LIMITATIONS

This was an observational and qualitative pilot study of a small convenience sample of women with PMS attending a hypertension clinic. Neither patients nor researchers were blinded to the experimental treatment. There was no control group and no quantitative measure of PMS symptoms was used in the study. Timing of improvement varied.

## DISCUSSION

Our clinical observation was that the potassium was effective in most of the women. An interesting finding in this cohort was the prevalence of previous drug reactions. Six patients had had hypersensitivity reactions to various drugs; with 4 qualifying for classification as cases of multiple drug intolerance syndrome [13]. Patients with marked psychosomatic component to their illness, especially women, are prone to multiple drug intolerance syndrome [14]. It may be that there are deficiencies in immune function and immunomodulatory cells may require adequate levels of intracellular potassium to function optimally.

## CONCLUSION

Potassium supplementation needs to be further studied in PMS.

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