Research and Report

The research conjecture that plasmalogen may be of great significance to the treatment of senile prostatic hypertrophy

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Background

The impact of plasmalogen on cognitive impairment associated with aging has garnered significant attention, with ongoing research positioning it as a key approach to enhancing brain function and combating aging.[1,4] In addition to its cognitive benefits, our observations during oral administration revealed an unexpected finding—an improvement in symptoms of prostate hypertrophy in elderly patients. This leads to the hypothesis that plasmalogen could have potential therapeutic implications for alleviating dysuria caused by prostatic hypertrophy. I hope that this hypothesis, grounded in case analysis, can contribute to early-stage advancements in medical research.

Prostatic hypertrophy, while subject to various hypotheses about its causes, is notably influenced by age and sex hormones. [1,2] Studies indicate that prostatic hyperplasia tends to increase after the age of 50, with cases becoming more prevalent as individuals age, suggesting a strong correlation between the condition and aging. [1] The prostate is a distinct male internal organ located at the base of the bladder, encircling the urethra. When the prostate enlarges, it can compress the urethra, resulting in difficulty urinating—a condition known as prostatic hypertrophy. With advancing age, prostate enlargement is inevitable in males. Though the extent of hypertrophy and urinary obstruction differs among individuals, it is estimated that one in four men over 60 will experience symptoms. The inability to urinate smoothly can significantly interfere with daily activities and quality of life. Medications aimed at inhibiting the effects of androgens—which are believed to play a role in prostatic hypertrophy—help reduce prostate size

and alleviate urinary difficulties. However, these treatments may carry the risk of side effects, such as sexual dysfunction.

Keywords:

Dysuria, senile prostatic hypertrophy, Plasmalogen, dihydrotestosterone, 5α-reductase, aging, testosterone.

Case presentation

In the three cases I reviewed—men aged over 60, over 70, and over 80—all individuals exhibited symptoms of prostatic hypertrophy, delayed urination, and dysuria. Each patient took one plasmalogen pill daily for more than six months, initially aiming to counteract aging, support brain function, and enhance cognitive nutrient absorption. Interestingly, after starting oral plasmalogen, there was a noticeable improvement in their symptoms, including reduced urinary waiting time, improved urinary stream, and alleviation of dysuria. All of them regained the ability to urinate voluntarily. None sought medical attention or used other medications for dysuria, nor did they require urinary catheterization for symptom relief.

Discussion

Hypothesis:

1. The Influence of Plasmalogen and Its Metabolites on Androgen

Currently, there is no direct evidence indicating that plasmalogen directly influences testosterone secretion or the activity of its receptor. [3]

However, 5α-reductase, an enzyme active in prostate cells, plays a crucial role in androgen metabolism. This enzyme converts testosterone into dihydrotestosterone (DHT), a form with a stronger binding affinity to androgen receptors, which can stimulate prostate tissue growth. The process of DHT production has been closely linked to the development of conditions like prostate hyperplasia and prostate cancer. The hypothalamus-pituitary-testis axis operates under a feedback mechanism that modulates hormone levels. As the body ages, androgen secretion naturally declines, [2] reducing negative feedback on gonadotropins and leading to an increase in androgen-releasing hormone levels. The potential role of plasmalogen in influencing testosterone or dihydrotestosterone secretion within this hormonal relationship remains unclear and demands further research. Should evidence emerge demonstrating plasmalogen or its metabolites' impact

on androgen levels, it may provide a foundational basis to elucidate its therapeutic effects on prostatic hypertrophy. Such findings could open new avenues for exploring plasmalogen as a treatment for age-related prostate enlargement. [3] Aging not only reduces plasma testosterone levels but also decreases the testosterone-to-estrogen ratio, potentially enhancing estrogen activity. This hormonal imbalance may encourage prostate cell proliferation. Another notable theory involves the heightened activity of 5α-reductase in elderly men, contributing to decreased testosterone-to-dihydrotestosterone ratios. This shift may promote prostate cell growth and subsequent hyperplasia. [2,6] It is hypothesized that plasmalogen might regulate the activity of 5α-reductase or directly target this enzyme, offering a potential mechanism to mitigate prostate cell proliferation. [2,7] Further investigations are essential to understand these interactions and their implications for combating conditions such as senile prostatic hypertrophy.

2. The relationship between the structural components of prostate tissue and plasmalogens

In the research report examining the composition and fatty acid content of rat ventral prostate phospholipids, researchers discovered that arachidonic acid in prostatic phospholipids is predominantly provided by ethanolamine glycerophospholipids. They also highlighted that this specific fraction contained 65-69 mol% plasmalogens, while the choline and serine glycerophospholipid fractions comprised less than 5 mol% plasmalogens. [3,5,8]

3. Impact on receptors associated with cells in prostate tissue

Benign prostatic hyperplasia (BPH) is commonly linked to factors such as aging, chronic inflammation, oxidative stress, and disruptions in cellular signaling pathways. Although plasmalogen replacement therapy is under investigation for conditions tied to plasmalogen deficiency, including neurodegenerative and chronic inflammatory diseases, [1] its role in addressing prostate hypertrophy has not been confirmed in the reviewed literature.

Conclusion

Benign prostatic hyperplasia is a prevalent urinary condition affecting men, typically manifesting after the age

of 50. The incidence of this complex, multifactorial disease rises with age. A well-rounded treatment approach focuses on alleviating symptoms by reducing prostate inflammation, enhancing blood circulation, and targeting hormone pathways associated with prostate enlargement. Plasmalogen may contribute to symptom relief by specifically inhibiting the hormone pathways linked to prostate hypertrophy.

I hope my hypothesis contributes to significant advancements in research on treating dysuria caused by senile prostatic hypertrophy using plasmalogen.

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Etc.