

## The Impact of Thrombotic Disorders on *Pennisetum Glaucum* Extract (PGE)

Hottela Steeve\*

Department of Disorders, University of Tokyo, Tokyo, Japan

### DESCRIPTION

Communicable and non-communicable illnesses have been linked to an increase in life expectancy and a rapid increase in the global population. Atherosclerosis, hypertension, diabetes mellitus, ischemic disorders, cancers, and thrombosis are all pathogenesis-related diseases, and oxidative stress is a major contributor to this. The leading non-communicable cause of mortality and disability is cardiovascular disease. Thrombosis is the primary pathology seen in three main cardiovascular diseases, including ischemic heart disease, stroke, and venous thromboembolism. The development of an unexpected clot in veins or arteries is known as thrombosis, which also entails the uncontrolled activation of many coagulation factors and platelets. The only treatment now available is target-specific anticoagulant and antiplatelet medication. The market is filled with both synthetic and natural medications, but their use is restricted by their potentially fatal adverse effects (internal bleeding, nausea, miscarriage, and vomiting) [1,2].

Finding innovative anticoagulant and antiplatelet drugs with no adverse effects from natural sources is therefore a major problem for researchers. Natural remedies derived from animals, microorganisms, plants, and marine sources have long been utilized to cure a variety of ailments. The foundation for current drug development is our predecessors' knowledge of traditional medicine. Natural products' enormous chemical and structural variety may be the primary reason why scientists are so interested in studying them. Around 80% of the world's population uses traditional medicine made from plants for primary healthcare, according to WHO documentation. According to recent research, approximately 5%-15% of terrestrial plant species have been investigated pharmacologically. Approximately 25% of today's commercially accessible medications come from plants. The first plant-based drug developed from *Papaver somniferum* that was isolated for commercial use was morphine [3,4].

Several chemicals were subsequently identified and marketed. Over the past few years, there has been a food revolution due to the dramatic rise in lifestyle illnesses, particularly in developing nations. As a result, people are reconsidering adopting millets as

the main staple meal in place of ragi, rice, and wheat. India is the world's greatest producer of pearl millet, despite the fact that it has been grown extensively across Asia and Africa. Cereal plants like *Pennisetum glaucum* have been utilized extensively since the prehistoric era due to their numerous health advantages. They provide the highest concentration of dietary fiber together with the widest range of macro and micronutrients. They have been shown to have enormous health advantages due to their ability to treat diabetes, high blood pressure, constipation, jaundice, and coronary heart disease. Despite *Pennisetum glaucum's* wide range of medicinal uses, its protective effects against thrombosis and oxidative stress have not been thoroughly studied. The current study seeks to determine the protective effects of *Pennisetum glaucum* (pearl millet) protein components on thrombosis and oxidative stress. Although pearl millets (*Pennisetum glaucum*) are one of the grain types that receive the least amount of attention, they are a rich source of nutrients and nutraceuticals. In fact, they are still regarded as a staple diet for the underprivileged. Proteins, unsaturated fatty acids, dietary fiber, and secondary metabolites were found to be present, and these substances have been linked to the prevention of a number of disorders, including cardiovascular, diabetes, and cataractogenesis. There aren't any reports, though, about the usefulness of the pearl millet's proteins or proteolytic enzymes [5,6].

Therefore, this study sheds light on the anticoagulant, antiplatelet, and antioxidant properties of *Pennisetum glaucum* (pearl millet) protein extract. The hyper activation of coagulation factors and platelets, which results in thrombosis, is largely attributed to oxidative stress. The primary cause of cardiovascular and cerebral vascular problems is thrombosis. In the management of thrombosis, anticoagulant and antiplatelet drugs have been widely used. While their use is restricted by deadly side effects include internal bleeding, headaches, nausea, and vomiting. Finding a new medicine derived from natural sources that has no adverse effects will therefore aid in better treating thrombotic diseases. Thus, the anticoagulant and antiplatelet characteristics of PGE are the focus of the current investigation [7,8].

**Correspondence to:** Hottela Steeve, Department of Disorders, University of Tokyo, Tokyo, Japan, E-mail: steevehol62586@gmail.com

**Received:** 07-Mar-2022, Manuscript No. JPCIC-22-20448; **Editor assigned:** 09-Mar-2022, Pre-QC No: JPCIC-22-20448 (PQ); **Reviewed:** 24-Mar-2022, QC No: JPCIC-22-20448; **Revised:** 30-Mar-2022, Manuscript No: JPCIC-22-20448 (R); **Published:** 08-Apr-2022; DOI: 10.35248/2471-9870.22.8.196

**Citation:** Steeve H (2022) The Impact of Thrombotic Disorders on *Pennisetum Glaucum* Extract (PGE). J Perioper Crit Intensive Care Nurs. 8:196.

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