

Spexin is associated with Painful Diabetic Peripheral Neuropathy

Lu Zhu

Fudan University

Ping hang Zheng

Fudan University

jing yao Jiang

Fudan University

Qi Zhang

Fudan University

Bin Lu

Fudan University

Ming Yi Li

Fudan University

rui liu (✉ rui.liu1221@126.com)

Fudan University

Research

Keywords: Diabetes mellitus, Spexin, Painful Diabetic Peripheral Neuropathy

Posted Date: March 26th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-340396/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: Spexin exerts multiple functions in the regulation of energy metabolism and glucose homeostasis. Diabetic peripheral neuropathy (DPN) is the most common complication of diabetes and almost one-third of patients with DPN suffer from neuropathic pain. Recent studies have shown that Spexin has antinociceptive effect. This study aims to evaluate the correlation between circulating Spexin level with the painful DPN.

Methods: This is a cross-sectional study including 20 patients with diabetes but without DPN (non-DPN) as the control group, 24 patients with painless DPN and 16 patients with painful DPN. A questionnaire and laboratory investigation were carried out to obtain information on demographic and clinical data. The existence and severity of DPN was assessed by electromyography (EMG) examination. Serum Spexin level was measured by ELISA.

Results: The serum Spexin level of patients with painful DPN was significantly lower than that of non-DPN patients ($p < 0.001$) and painless DPN patients ($p = 0.035$). The binary logistic regression analysis showed that lower serum level of Spexin was independently associated with the presence of painful DPN after adjusting for age, sex, BMI, duration of diabetes, HbA1c, 2hPBG, hypertension and status of smoking or drinking. Compared to individuals with higher level of Spexin, the prevalence rate of painful DPN in those with lower level of Spexin was significantly higher.

Conclusion: Circulating Spexin level decreased in painful DPN, suggesting a possible role of this peptide in pain-related pathogenesis.

Full Text

This preprint is available for [download as a PDF](#).

Figures

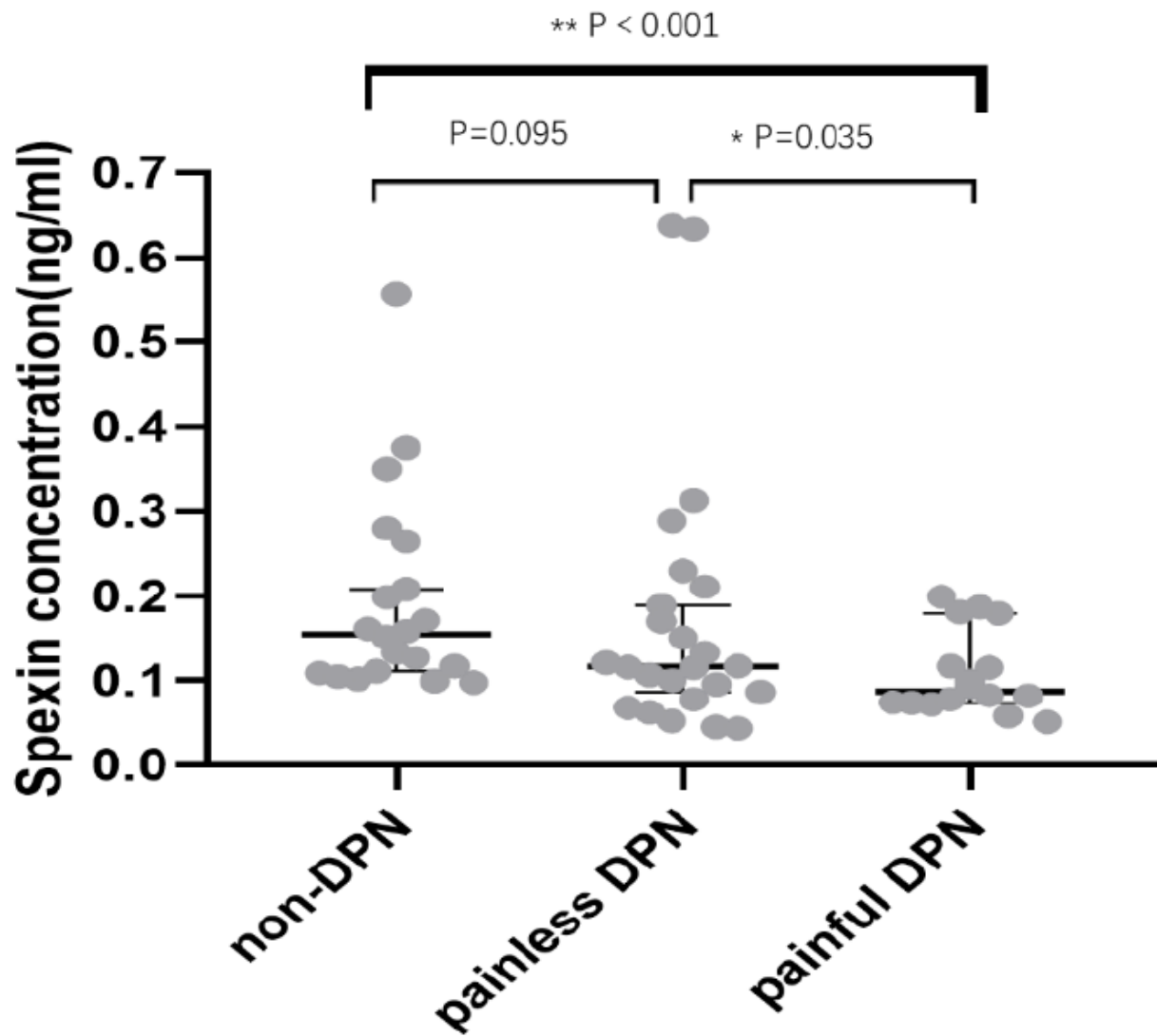


Figure 1

Spexin concentration in diabetes patients without DPN (non-DPN), painless diabetic peripheral neuropathy (painless DPN) and painful diabetic peripheral neuropathy (painful DPN) patients. Individual data points are shown for all study patients. Median value for each group is shown as a dashed line.

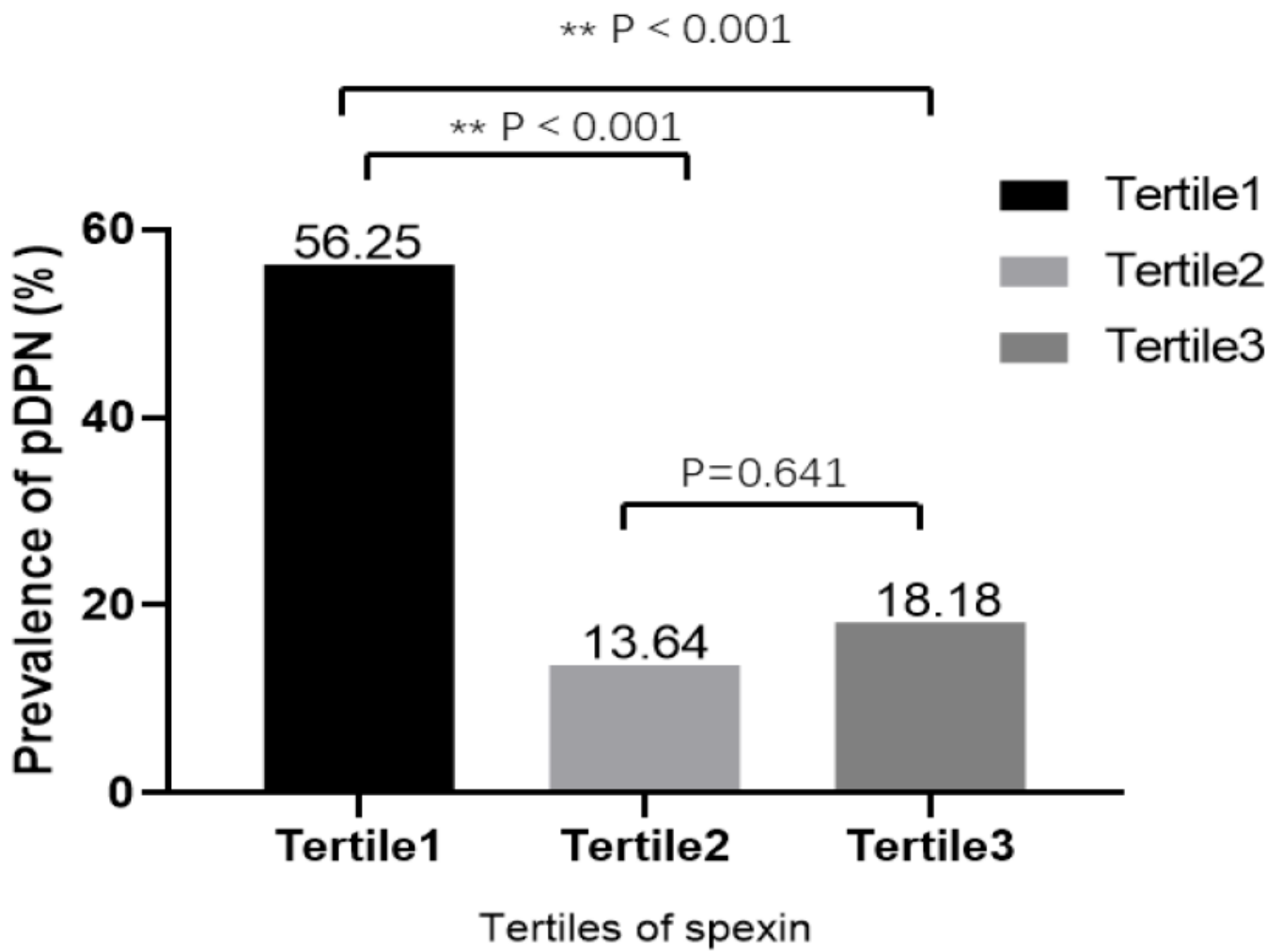


Figure 2

Prevalence of painful diabetic peripheral neuropathy according to tertiles of Spexin (%)