

P.PORTO

ESCOLA
SUPERIOR
DE SAÚDE

3 EBtM

III ENCONTRO DE
BIOTECNOLOGIA
MEDICINAL

I IBERIAN CONGRESS ON
MEDICINAL
BIOTECHNOLOGY

BOOK OF ABSTRACTS



ENCONTRO DE
BIOTECNOLOGIA
MEDICINAL

18 DE MAIO DE 2018
ESCOLA SUPERIOR DE SAÚDE
POLITÉCNICO DO PORTO



IBERIAN CONGRESS ON
MEDICINAL
BIOTECHNOLOGY

MAY 18TH, 2018
SCHOOL OF HEALTH
POLYTECHNIC OF PORTO



III ENCONTRO DE
BIOTECNOLOGIA
MEDICINAL

III IBERIAN CONGRESS ON
MEDICINAL
BIOTECHNOLOGY

**COMISSÃO ORGANIZADORA
ORGANIZING COMMITTEE**

Ana Rita Costa
Ana Rita Dias
Cristina Prudêncio
Dulce Teixeira
Joana Almeida
Mónica Vieira
Pedro Coelho
Ricardo Ferraz
Sofia Cunha

**COMISSÃO CIENTÍFICA
SCIENTIFIC COMMITTEE**

Cristina Prudêncio
Mónica Vieira
Pedro Coelho
Ricardo Ferraz

ISBN: 978-989-20-8533-3

Diabetic neuropathy and oxidative stress: a systematic review focused on oxidative stress biomarkers analysis.

CUNHA S^{1,2,3} NASCIMENTO AP^{2,3,4} VIEIRA M^{1,2,5} PRUDÊNCIO C^{1,2,5}

1- Ciências Químicas e das Biomoléculas, Escola Superior de Saúde, Instituto Politécnico do Porto, Porto, Portugal

2- Centro de Investigação em Saúde e Ambiente, Escola Superior de Saúde, Instituto Politécnico do Porto, Porto, Portugal

3- Departamento de Biología Funcional y Ciencias de la Salud, Universidad de Vigo, Vigo, España

4- Biomatemática, Bioestatística e Bioinformática, Escola Superior de Saúde, Instituto Politécnico do Porto, Porto, Portugal

5- i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Porto, Portugal

Introduction: Diabetic neuropathy is a worldwide disease with great impact in modern society. Diabetes may lead to the overproduction of reactive oxygen species, resulting in an imbalance in body's redox homeostasis. Oxidative stress is pointed as an important phenomenon associated with several disease states, including diabetic neuropathy.

Material and Methods: A PubMed search using the MeSH terms “Oxidative Stress” [AND] “Diabetic Neuropathies” was conducted, with no linguistic restriction, to collect the studies that relate oxidative stress and diabetic neuropathy between 1994 and 2017. The main inclusion criterion was the abstract, including keywords, presents oxidative stress and diabetic neuropathy or related words. Being a review article or articles that were not written in English were exclusion criteria.

Results and Conclusions: The search originated 310 studies and 189 had matched the first inclusion criterion. From those, 53 are reviews and 4 are not written in English. 2008 and 2015 are the years with more publications (n=27) and in the last 5 years were published 105 papers, representing almost 1/3 of the total. Mice were the preferred biological model (n=100), thus Wistar (n=37) and Sprague-Dawley (n=37) were the most used. Lipid peroxidation, an oxidant biomarker (n=54), and the enzyme superoxide dismutase (n=32), an antioxidant biomarker, were the biomarkers assessed more frequently. Thus, this data search indicated that the evaluation of oxidative stress biomarkers may have clinical significance and may be useful in diabetic neuropathy diagnostic, representing a possible relation between both and having valid biotechnological interest/application.

Keywords: diabetic neuropathy, oxidative stress and oxidative stress biomarkers.