

Evaluation of the Effect of PPAR Receptor Modulators in Experimentally Induced Inflammatory Bowel Disease

A
THESIS
SUBMITTED TO
GUJARAT TECHNOLOGICAL UNIVERSITY
TOWARDS PARTIAL FULFILLMENT FOR
THE DEGREE OF

**MASTER OF PHARMACY
IN PHARMACOLOGY**

Internal Guide:

Asst. Prof. SNIGDHA DAS MANDAL
M. PHARM. (PHARMACOLOGY)
PARUL INSTITUTE OF PHARMACY AND RESEARCH

SUBMITTED BY:
Mittal N Tank
(Enrolment No: 112140803010)



PARUL INSTITUTE OF PHARMACY AND RESEARCH

PO: LIMBDA, WAGHODIA

VADODARA-391760

MAY - 2013

ABSTRACT

Objective: The objective of the present study was to evaluate the effect of PPAR receptor modulators in experimentally induced inflammatory bowel disease in rats, the effect of PPAR- α (Fenofibrate) and PPAR- γ (Pioglitazone) agonist individually and in combination and the effect of Palmitoylethanolamide (combined PPAR- α and γ agonist) as PPAR modulator in treatment of inflammatory bowel disease.

Method: The Inflammatory bowel disease was induced by TNBS (30 mg in 0.25 ml of 50% ethanol), intrarectally. Animals were divided into 6 groups. Group 1 (Model control), had received TNBS 30 mg in 0.25 ml of 50% ethanol, intrarectally.

Group 2 (Standard Group), had received TNBS 30 mg in 0.25 ml of 50% ethanol intrarectally + prednisolone, 10 mg/kg, p.o. for 21 days. Group 3 had received TNBS (30 mg in 0.25 ml of 50% ethanol), intrarectally + Fenofibrate (100mg/kg, p.o.) after 24 hr of TNBS induction, for 21days.

Group 4 had received TNBS 30 mg in 0.25 ml of 50% ethanol, intrarectally + Pioglitazone (10mg/kg p.o.) after 24 hr of TNBS induction, For 21days. Group 5 had received TNBS (30 mg in 0.25 ml of 50% ethanol), intrarectally + Fenofibrate (100 mg/kg p.o.) and Pioglitazone (10 mg/kg p.o) after 24 hr of TNBS induction, for 21 days.

Group 6 had received TNBS (30 mg in 0.25 ml of 50% ethanol), intrarectally + Palmitoylethanolamide (PEA) (10 mg/kg p.o.) after 24 hr of TNBS induction, for 21 days. On the 21st day of drug treatment, blood was collected and biochemical parameters like NO, MPO, MDA, CRP, SOD were estimated in all groups of animals.

Result And Discussion: Fenofibrate (PPAR- α agonist) and Pioglitazone (PPAR- γ agonist) ameliorate colitis as in individual and in combination. Palmitoylethanolamide (PPAR α/γ agonist) also has around same effect as that combination.

Conclusions: Combination of the PPAR receptor is significantly more effective than the individual effect of PPAR α and PPAR γ .