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Original Research Paper

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TO EVALUATE THE ANTI-INFLAMMATORY EFECT OF POLYALTHIA SUBERSOSA PLANT EXTRACT BY USING PROTEIN DENATURATION ASSAY-IN VITRO STUDY

Dr. Selvi. P — Final Year Post Graduate, Department Of Pharmacology, Sree Balaji Medical College And Hospitals ,chennai-44

Dr. Arul Amutha Elizabeth* — Proffessor Of Pharmacology, Department Of Pharmacology, Sree Balaji Medical College And Hospitals , Chennai-44 * Corresponding Author

ABSTRACT

Inflammation is defined as the body response to injury, infection or destruction characterized by heat, redness, pain, swelling and disturbed physiological functions. Inflammation is initiated as a healing process by the tissue in response to an injury by pathogens, irritants or cell damage. Anti-inflammatory drugs like NSAIDS which are more commonly used in practice for various inflammatory conditions have major adverse effects . And hence various plants are believed to be an important source of new chemical substances with potential therapeutic effects and research into plants with alleged folkloric use as anti-inflammatory agents with less side effects should be evaluated for logical research strategy in the search for new anti-inflammatory drugs.

In the current study we evaluated the in vitro anti-inflammatory effect of polyalthia subersosa plant extract using protein denatuartion assay. The results were the percentage of Inhibition of polyalthia suberosa plant extract(A1) with product control(A2) and positive control(A0) was 58.64%, 59.65% at concentration sample 100,200 µg/ml respectively.

KEYWORDS : Inflammation, Nsaids, Polyalthia Suberosa, Protien Denaturation

INTRODUCTION

Inflammation is the complex biological response of vascular tissues to harmful stimuli including pathogens, irritants.Inflammation is either acute or chronic. Acute inflammation is characterized by classical signs- edema, erythrema, pain, heat and above all, loss of function. The classical signs are triggered by the infiltration of the tissues by serum and white blood corpuscles (leucocytes). Chronic inflammation results in a progressive shift in type of cells, present at site of inflammation. It is characterized by simultaneous destruction and healing of the injured tissue from incidence of inflammation.

Steroidal and non-steroidal anti-inflammatory drugs are currently and most widely used drugs in the treatment of acute inflammatory disorders, despite their renal and gastric negative secondary effects. On long term use there is irreversible damage to various systems like GIT and renal systems. This has led to the search for alternative treatments. And hence plant extracts with less side effects were evaluated for anti-inflammatory effect.

Hence, the current study evaluated the in vitro anti-inflammatory effect of polyalthia suberosa plant extract. Polyalthia suberosa belongs to the family (Annonaceae) and various parts of this plant were extensively studied for its anti-oxidant, analgesic and anti microbial properties. Hence literatures supporting anti inflammatory activity of polyalthia suberosa were very few the current study focused on evaluating anti inflammatory effect using protein denaturation assay.

MATERIALS AND METHODS

Sample extraction:

The polyalthia suberosa leaves was washed with distilled water to remove any adherent particles, shade dried and powdered. 25 gram of powdered samples were taken and extracted with ethanol using soxhlet apparatus. The extract was collected, condensed under reduced pressure in rotary vacuum evaporator and stored at 4°C.

Procedure

Inhibition of protein denaturation:

100µl of algal extract was added with 500µl of 1% BSA. The mixture was incubated for 10 minutes at 37ºC. Heat the contents in a water bath at 51ºC for 20 minutes. Cool down to room temperature and check the absorbance at 660nm against the blank. Acetyl Salicylic acid was used as positive control.

CALCULATION:

%inhibition = 100-{(A1-A2)/A0*100}

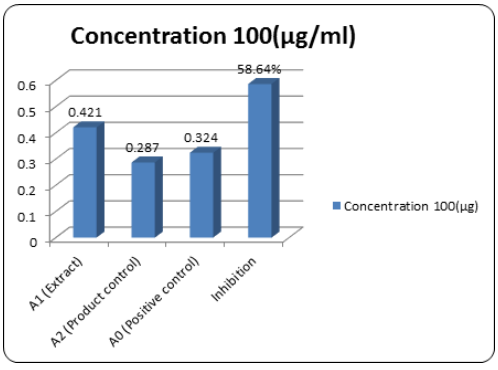
A0 = positive control, A1 = extract, A2 = product control

RESULTS:

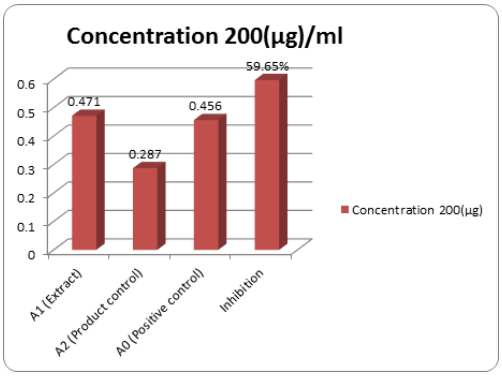
S.No	Concentration (µg)	O.D at 660nm			% Inhibition
		A1	A2	A0	
1	100	0.421	0.287	0.324	58.64
2	200	0.471	0.287	0.456	59.65

The above tabular column shows the percentage of inhibition of plant extract(polyalthia suberosa)A1, with that of product control - A2 and positive control-A1 at concentrations samples 100 and 200µg/ml.

PERCENTAGE OF INHIBITION AT 100µg- CHART 1



PERCENTAGE OF INHIBITION AT 200µg/ml- CHART-2



The above – **Chart -1 and chart-2** shows the percentage of

Inhibition of polyalthia suberosa plant extract(A1) with product control(A2) and positive control(A0) was 58.64%, 59.65% at concentration sample 100,200 µg/ml respectively.

DISCUSSION AND CONCLUSION

To summate, from the current study it is evident that the percentage of inhibition of polyalthia suberosa was 58,64% and 59.65% at 100 and 200 µg/ml concentration. Hence this inevitably provides insight into the anti inflammatory property of polyalthia suberosa plant extract. Therefore further in vitro and in vivo studies are required to establish firm anti inflammatory characteristics of polyathia suberosa plant extract. Thus this may lead to discovery of newer potential lead molecules which can serve as better anti inflammatory agent with lesser adverse effects.

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