



EVALUATION OF ANALGESIC AND ANTIINFLAMMATORY EFFECTS OF ETHANOLIC LEAVES EXTRACT OF *INDIGOFERA MYSORENSIS*

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ABSTRACT

Indigofera is the third-largest genus in the family of Fabaceae, with approximately 750 species. It is distributed across all tropical regions. Indigofera species are widely employed in traditional medicine all around the world, against many ailments. Thus, based on these medicinal properties, various investigations have been undertaken in order to appraise the pharmacological activities and the chemical composition of these species. Indigofera mysorensis is a shrub used for its analgesic and anti-inflammatory activity in rural India. Here, we elucidate the analgesic and anti-inflammatory activity of Indigofera mysorensis ethanolic leaves extract. phytochemical screening of Indigofera mysorensis extract showed the presence of alkaloids, Carbohydrates, Glycosides, Flavonoids, Tannins, Proteins, Amino Acids. the ethanolic leaves extract of Indigofera mysorensis, possess peripheral and central analgesic activity in animal model. The Indigofera mysorensis leaves extract shows anti-inflammatory activity in different animal model. Flavonoids and tannins are the major constituents of Indigofera mysorensis leaves, which may be responsible for its Analgesic, Anti-inflammatory activity.

KEYWORDS: Indigofera mysorensis, Phytochemical screening, Analgesic activity, Anti-inflammatory activity.

INTRODUCTION

Cerebral and coronary artery diseases are the leading causes of death around the world. More and more researchers have demonstrated that abnormal inflammatory cells form a plaque and play an essential role in the pathogenesis and progression of atherosclerosis.^[1] Anti-inflammatory agents have been shown to have good effects on the prevention and treatment of atherosclerosis and coronary artery diseases.^[2] Therefore, developing novel anti-inflammatory drugs is very important today.

Analgesic drugs operate in different ways on the peripheral and central nervous systems. Narcotic drugs, such as morphine, have analgesic activity, which inhibits the delivery of pain impulses.^[3,4] Peripheral drugs include paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs). Only NSAIDs possess analgesic and anti-inflammation activity due to the mechanism of inhibiting cyclooxygenases (COXs) for the decrease in prostaglandin (PG) production, which consequently reduces pain and inflammation. However, the NSAIDs used clinically are often of limited application because of their common side effects, such as gastrointestinal (GI) hemorrhage. As to COX, COX-1 is thought to provide cytoprotection, whereas COX-2 inhibitor may have

selective anti-inflammatory properties and lack GI side effects.

Indigofera mysorensis Rottl. ex DC., Fabaceae, commonly known as Konda vempali, is a glutinous shrub used for its antidiabetic activity in rural India.^[5] It is common in dry deciduous forests, especially on exposed rocky slopes. It is common in dry deciduous forests, especially on exposed rocky slopes of Japalitheertham in Tirumala, way to water falls at Talakona, Punganur and border of Karnataka State. Leaves simple, trifoliate or imparipinnate the side leaflets usually opposite, but sometimes alternate, entire; stipules usually small shortly adnate to the petiole. Flowers are generally very small usually reddish or purple, in axillary panicles. Calyx minute campanulate, teeth sub equal or the lowest longest. Corolla more or less caduceus, standard ovate or orbicular, sessile or slightly clawed; wings oblong slightly adherent to the keel; keel petal erect, obtuse with a downward spur on each side near the base stamens didelphous the vexillary stamens free the other with connate filaments; anther uniform apiculate. Ovary sessile or subsessile 1-2 pod cylinder, pubescent, 3-5 in long 3-4 seeded.^[6]

MATERIALS AND METHODS

Collection, identification and Authentication of plants:

The whole plant of *Indigofera mysorensis* collected in the month of february, 2021 from chittur dist. The plant materials were identified and authenticated by Prof. Madhav Shetty, Dept. of botany, Taxonomist, SV University, Tirupati. A voucher was kept in the Department of Pharmacognosy for reference.

Extraction Procedure

The coarse powder was packed tightly in the soxhlet apparatus and extracted with ethanol for 72 hours with occasional shaking maintained at 60°C throughout the extraction process. The extract was concentrated to its original volume by evaporation. The resulting ethanolic extract of the *Indigofera mysorensis* was subjected to phytochemical study. The percentage yield of extraction is shown in Table 1.

Preliminary Phytochemical Screening

The condensed extracts were used for preliminary screening of phytochemicals such as cholesterol, alkaloid, flavanoids, saponin, cardiac glycosides and terpenoids.^[7-8] The phytochemical screening shown in Table 2.

Screening Procedure

Test for flavanoids

Add a few drops of concentrated HCL and Mg turning to 1 ml of ethanol extract. Appearance of pink or magenta-red colour indicates the presence of flavanoids.

Test for cholesterol

To 2 ml of the extract 2 ml of the chloroform was added in a dry test tube. Then 10 drop of acetic anhydride and 2 to 3 drops of con. H₂SO₄ was added. A red colour changed to blue green colour.

Test for Alkaloids

To the extract added 1% HCl and 6 drops of Mayer's reagent and Dragendorff reagent. Any organic precipitate indicated the presence of alkaloids in the sample.

Test for terpenoids

5ml of each extract was added to 2ml of chloroform and 3ml of con. H₂SO₄ to form a monolayer of reddish-brown coloration of the interface was showed to form positive result for the terpenoids.

Test for cardiac glycoside

5ml of each extract was treated with 2ml of glacial acetic acid containing one drop of ferric chloride solution. This was underplayed with 1ml of con. H₂SO₄. A violet ring might appear below the brown ring whereas acid layer, a greenish ring might form just gradually throughout thin layer.

Test for steroids

2 ml of acetic anhydride was added to 0.5 g of ethanolic

extract of each sample with 2ml of H₂SO₄. The colour change from violet to blue or green indicated the presence of steroids

Test for Saponins

The extract with 20 ml of distilled water was agitated in a graduated cylinder for 15 minutes. The formation of 1cm layer of foam indicated the presence of saponins.

Pharmacological studies

Swiss albino mice weighing 20-25 gm wistar rats weighing 150- 200 gm were used for this study. The experiments were carried out in Jeeva life Sciences (Jeeva life Sciences have in house breeding). On arrival, the animals were placed randomly and allocated to treatment groups in polypropylene cages with paddy husk as bedding. Animals were housed at a temperature of 24±2°C and relative humidity of 30-70%. A12: 12 light: day cycle was followed. All animals were allowed to free access to water and bed with standard commercial pelleted chow. All the experimental procedures are protocols used in this study were reviewed by Institutional Animal Ethics Committee, proposal number and were accordance with the guidelines of the IACE. The study was conducted after obtaining from committee for the purpose of control and supervision on animals (CPCSEA) and institutional animal ethics committee (IAEC), proposal number CPCSEA/IAEC/JLS/15/05/21/ 06.

Acute Toxicity Studies^[9]

The acute toxicity was performed according to OECD guidelines. The selected albino rats were used for toxicity studies. The animals were divided into five groups of three in each. The animals were fasted overnight prior to the acute experimental procedure. Extract was given orally to rats at the graded doses like 5, 50, 100, 1000 & 2000 mg/ kg body weight. Immediately, after dosing, the animals were observed continuously for first four hours for behavioural changes were closely observed for hyperactivity, ataxia, convulsion, salivation, tremors, diarrhoea, lethargy, sleep. They were then kept under observation up to 14 days after drug administration to determine the mortality, if any. One-tenth and one-fifth of the maximum tolerated dose (200 and 400 mg/ kg, body weight) of ethanol leaf extract of *Indigofera mysorensis*. selected to evaluate analgesic, anti-inflammatory studies in rats.

EXPERIMENTAL METHODOLOGY

Pharmacological studies

Analgesic activity

Hot plate method in mice^[10]

The hot plate assay method was employed for the purpose of preferential assessment of possible centrally mediated analgesic effects of ethanolic extract of *Indigofera mysorensis*. In this experiment, four groups (n=6) of Swiss albino mice (20-25 g) were placed on a

hot plate maintained at room temperature for 15 min. Food was withdrawn on the preceding night of the experiment. Group I- Normal Control received CMC (0.5%), and Group II- standard treated with pentazocine (3 mg/kg i.p), whereas group III and IV- animals were treated orally with ethanolic extract of *Indigofera mysorens* (200 and 400 mg/kg respectively).

Group I : Normal control (CMC).

Group II : Standard (Pentazocine 3 mg/kg).

Group III : Test Drug I (Ethanolic leaf extract of *Indigofera mysorens* 200mg/kg).

Group IV : Test Drug II (Ethanolic leaf extract of *Indigofera mysorens* 400mg/kg).

Each animal was then individually placed gently on Eddy's hot plate at 55°C. Latency to exhibit nociceptive responses such as licking paws or jumping off the hot plate were determined at 30, 60, 90 and 120 min after administration of the drugs or vehicle

Tail immersion test^[147]

This method assessment was used to evaluate the centrally mediated analgesic effects of ethanolic extract of *Indigofera mysorens*. The wistar rats were divided into four groups each consists of six animals. They were placed into individual restraining cages leaving the tail hanging out freely. The lower 5cm portion of the tail is marked and this part of the tail was immersed in a water bath containing water at a temperature of 55± 0.5 °C. Withdrawing the tail from the hot water showed the analgesic effect. The reaction time was noted on a stop-watch. Each animal served as control. The average of the two values was the initial reaction time. Group –II served as standard and received pentazocine (3 mg/kg, i.p) The Group III and IV were treated orally with ethanolic extract of *Indigofera mysorens* (200 mg/kg and 400mg/kg) respectively.

Group I : Normal Control

Group I : Pentazocine (3 mg/kg)

Group III : Test Drug I (Ethanolic extract leaf *Indigofera mysorens* 200mg/kg)

Group IV : Test Drug II (Ethanolic extract leaf *Indigofera mysorens* 400mg/kg)

The reaction time of the groups were taken at 0, 30, 60, 90 and 120min. The cut off time of the immersion was 15seconds. The reaction time was measured.

Acetic acid induced writhing response in mice

This method was used to preferentially evaluate possible peripheral analgesic effects of ethanolic extract of *Indigofera mysorens*. Four groups of Swiss albino male mice (n=6) were fasted overnight prior to start the experiment with free access to water. The peripheral analgesic drug Diclofenac sodium (10 mg/kg) was used as a positive control. Group-I Normal Control received CMC (0.5%) Group-II was treated with Diclofenac Sodium (10mg/kg), whereas Group III and IV were treated orally with the ethanolic extract of *Indigofera*

mysorens at a dose of 200 mg/kg and 400mg/kg respectively.

Group I : Normal Control

Group II : Diclofenac Sodium (10mg/kg).

Group II : Test Drug I (Ethanolic extract leaf *Indigofera mysorens* 200mg/kg).

Group IV : Test Drug II (Ethanolic extract leaf *Indigofera mysorens* 400mg/kg).

After 30 min of treatment, the mice were injected intra peritoneally with 0.1 ml of 1% acetic acid solution to induce the characteristic writhings. The mice were then placed in an observation box and the numbers of writhing were counted in a 5min period. The response of the extract and Diclofenac sodium treated groups was compared with those of animals in the control group.

Anti-inflammatory activity

Carrageenan-induced paw edema in rats^[11]

For this experiment, the rats (120-150g) were divided into four groups (n=6). The group I received 0.5% CMC (10ml/kg), while the Group II received Indomethacin (10mg/kg). The Group III and IV were treated orally with the ethanolic extract of *Indigofera mysorens* at a dose of 200 mg/kg and 400mg/kg orally.

Group I : Normal Control (CMC)

Group II : Indomethacin (10mg/kg)

Group II : Test Drug I (Ethanolic extract leaf *Indigofera mysorens* 200mg/kg)

Group IV : Test Drug II (Ethanolic extract leaf *Indigofera mysorens* 400mg/kg)

Acute inflammation was produced by injecting 0.1 ml of 1% (w/v) carrageenan suspension into the sub planter region of the right hind paw of the rats. The animals were pretreated with the drug 1 hour before the administration of carrageenan⁽⁵¹⁾. The paw thickness was measured at 1, 2, 3 and 4 h after carrageenan injection by using digital vernier callipers.

Cotton pellet induced granuloma method in rats^[12]

Cotton pellets, weighing 5mg each were sterilized. Under ether anaesthesia, the pellets were introduced subcutaneously through a skin incision on the back of the animals. Starting from 30 min after the implantation of cotton pellet for all the rats, Group-I normal control received CMC (0.5%) orally. Group-II was treated with Dexamethasone (1 mg/kg), whereas Groups III and IV were treated orally with 200 mg/kg and 400 mg/kg of ethanol extract *Indigofera mysorens*.

Group I : Normal Control (CMC).

Group II : Dexamethasone (1mg/kg).

Group III: Test Drug I (Ethanolic extract leaf *Indigofera mysorens* 200mg/kg).

Group IV: Test Drug II (Ethanolic extract leaf *Indigofera mysorens* 400mg/kg).

The test drugs were administered daily for 7 days. On the 8th day, the animals were sacrificed with diethyl ether.

The granulomas were removed and the weighed.

Statistical examination of data

Results were communicated as mean $\pm$ S.E.M. The measurable contrast between the gatherings in the term

of the mean rate of wound mending was determined as far as ANOVA mean $\pm$ S.E.M. The thing that matters was viewed as noteworthy if $P < 0.05$.

Data were analyzed by using One-way ANOVA followed by Dennett's test.

RESULTS AND DISCUSSION

Percentage yield of extraction

Table no 1: Percentage yield.

S.No	Type of extraction	Percentage yield
1.	70% Eathanol	17.54%

Quantitative phytochemical analysis of extracts.

Table no 2: Quantitative phytochemical analysis.

S.No	Test	Ethanol extract
1.	Carbohydrates	+
2.	Glycosides	+
3.	Proteins & Amino acids	+
4.	Tannins	+
5.	Alkaloids	+
6.	Phytosterols	-
7.	Flavanoides	+
8.	Phenolic compounds	+
9.	Saponins	-
10.	Tannins	+

The qualitative phytochemical analysis of ethanolic extract of *Indigofera mysorensis*. It contains alkaloids, Carbohydrates, Glycosides, Flavonoids, Tanins Proteins, Amino Acids.

Pharmacological Activity

Analgesic activity

Hot plate Method in Mice

The analgesic activity of ethanolic leaves extract of *Indigofera mysorensis* was assessed using hot plate method in Swiss albino mice. The ethanolic leaves extract of *Indigofera mysorensis* showed significant

analgesic activity at 200 and 400 mg/kg. Analgesic activity was comparable with standard drug pentazocine. Among the two doses, 400 mg/kg showed maximum analgesic activity at reaction time 120 min (7.2 ± 0.44) is slightly lower than the standard drug pentazocine (9.9 ± 0.34) in this analgesic testing model, pentazocine significantly prolonged the reaction time of animals with relatively extended duration of stimulation, confirming centrally active drugs. In the present study, all extracts showed significant ($p < 0.05$ and $p < 0.01$) analgesic activity but among the two doses, 400 mg/kg showed highest analgesic activity at reaction time 120 min.

Table no 3: Analgesic effect of ethanolic extract of *Indigofera mysorensis* on hot plate test in Swiss albino mice.

ANIMALS	Paw licking or jumping in seconds			
	30 min	60 min	90 min	120 min
Group-I	2.2 ± 0.22	2.6 ± 0.12	2.9 ± 0.21	2.8 ± 0.10
Group-II	2.8 ± 0.18	$6.9 \pm 0.62^{**}$	$9.8 \pm 0.64^{**}$	$9.9 \pm 0.34^{**}$
Group-III	2.7 ± 0.20	$3.7 \pm 0.15^{*}$	$4.6 \pm 0.21^{**}$	$4.1 \pm 0.41^{**}$
Group-IV	2.8 ± 0.14	$5.8 \pm 0.37^{**}$	$7.4 \pm 0.39^{**}$	$7.2 \pm 0.44^{**}$

Values were mean $\pm$ SEM, (n=6), $^{*}P < 0.05$ $^{**}P < 0.01$ Vs control.

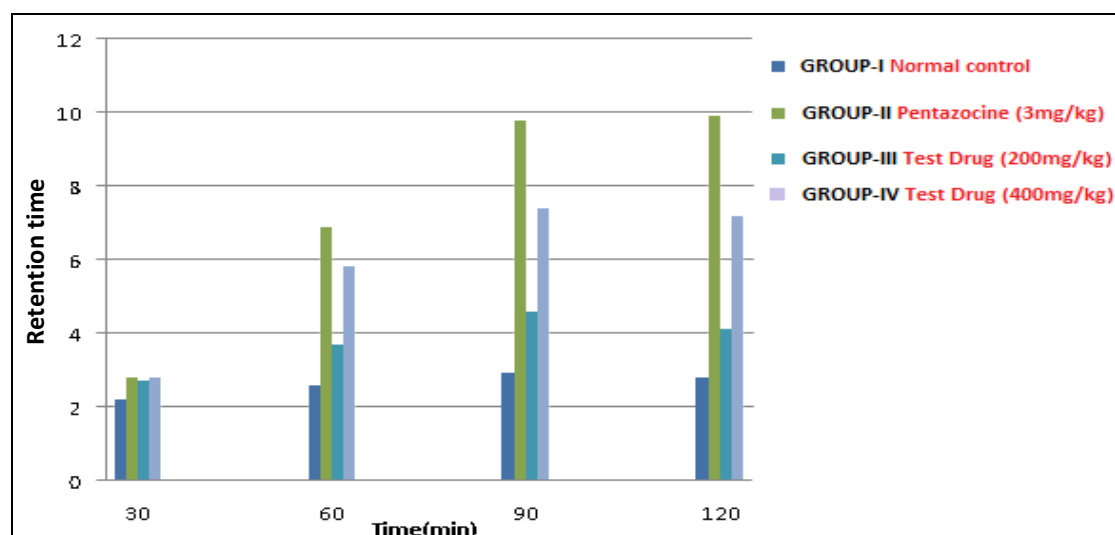


Fig 1: Analgesic effect of ethanolic leaves extract of *Indigofera mysorensis* on hot plate method in mice.

Tail Immersion Method

There was a significant reduction of pain full sensation due to tail immersion in warm water. The maximum inhibitory effect of Showed significant ($p < 0.01$) at 90

min post dose in 400 mg/kg. The maximum antinociceptive properties of the plant extract (3.5 ± 0.04) were not as effective as that of pentazocine, 3 mg/kg (5.8 ± 0.06).

Table no 4: Analgesic effect of ethanolic leaves extract of *Indigofera mysorensis* on tail immersion method in rats.

ANIMALS	Mean latency to tail immersion in seconds				
	0 min	30 min	60 min	90 min	120 min
Group-I	1.5 ± 0.04	1.4 ± 0.02	1.6 ± 0.01	1.6 ± 0.03	1.7 ± 0.04
Group-II	1.8 ± 0.06	$2.6 \pm 0.04^{**}$	$4.2 \pm 0.02^{**}$	$5.8 \pm 0.06^{**}$	$5.4 \pm 0.02^{**}$
Group-III	1.2 ± 0.02	$1.9 \pm 0.01^*$	$2.1 \pm 0.04^*$	2.4 ± 0.02	$2.8 \pm 0.04^*$
Group-IV	1.4 ± 0.01	$2.0 \pm 0.04^*$	$2.6 \pm 0.01^{**}$	$3.5 \pm 0.04^{**}$	$3.2 \pm 0.01^{**}$

Values were mean $\pm$ SEM, (n=6), * $P < 0.05$ ** $P < 0.01$ Vs control.

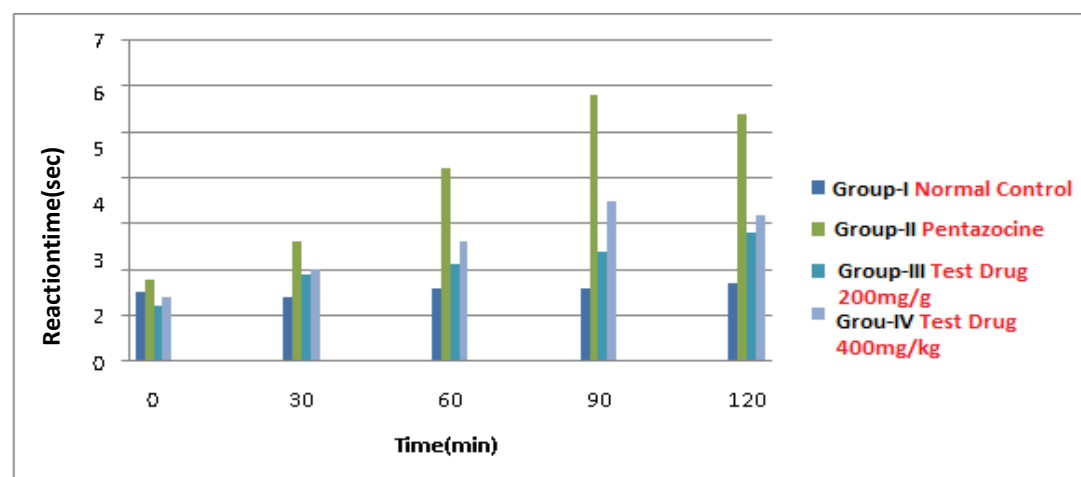


Fig 2: Analgesic Effect of Ethanolic Leaves Extract Of *Indigofera mysorensis* On Tail Immersion Method In Rats.

Acetic Acid- Induced Writhing Response in Mice

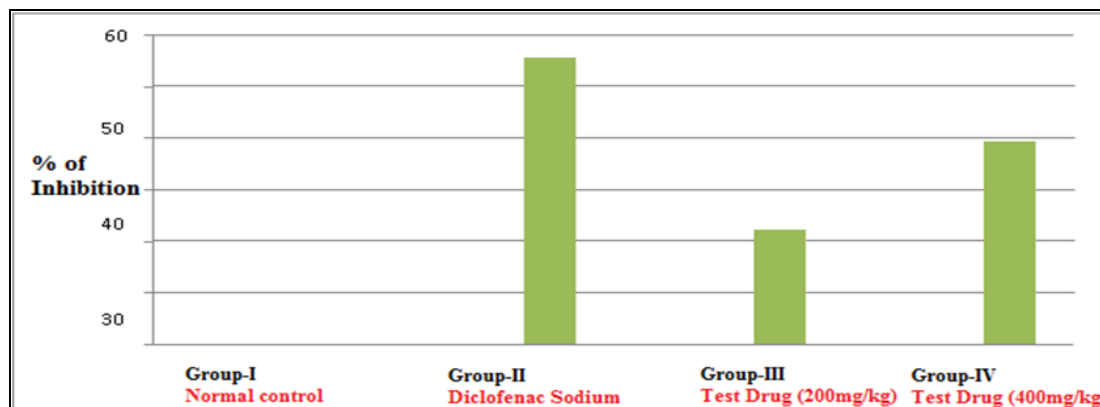
The oral administration of ethanolic leaves extract of *Indigofera mysorensis* Showed a dose dependent analgesic activity. Injection of acetic acid into control mice produced 51.4 ± 6.4 writhes. Pre- treatment with ethanolic extract of *Indigofera mysorensis* at doses of 200 and 400 mg/kg reduced the number of writhes

39.4 ± 2.4 (23.34 % protection) and 31.2 ± 2.1 (39.29 % protection) respectively. Among the two doses 200, 400 mg/kg showed the slightly lower analgesic activity than standard drug Diclofenac Sodium 22.8 ± 1.9 (55.64 % protection) it was observed that the onset of writhing was delayed and duration of writhing was shortened.

Table no 5: Analgesic effects of ethanolic leaves extract of *Indigofera mysorensis*, (on acetic acid writhing test in Swiss albino mice.

ANIMALS	Number of Writhes	Percentage of Inhibition (%)
Group-I	51.4±6.4	--
Group-II	22.8±1.9**	55.64
Group-III	39.4±2.4**	23.34
Group-IV	31.2±2.1**	39.29

Values were mean $\pm$ SEM, (n=6), **P<0.01 Vs control. Data were analyzed by using One-way ANOVA followed by Dunnett's test.

**Fig 3: Analgesic effect of ethanolic leaves extract of *Indigofera mysorensis*, on acetic acid induced writhing response in mice. Results are expressed as a percentage of inhibition.**

Anti-Inflammatory Activity

Carrageenan-Induced Paw Edema in Rats

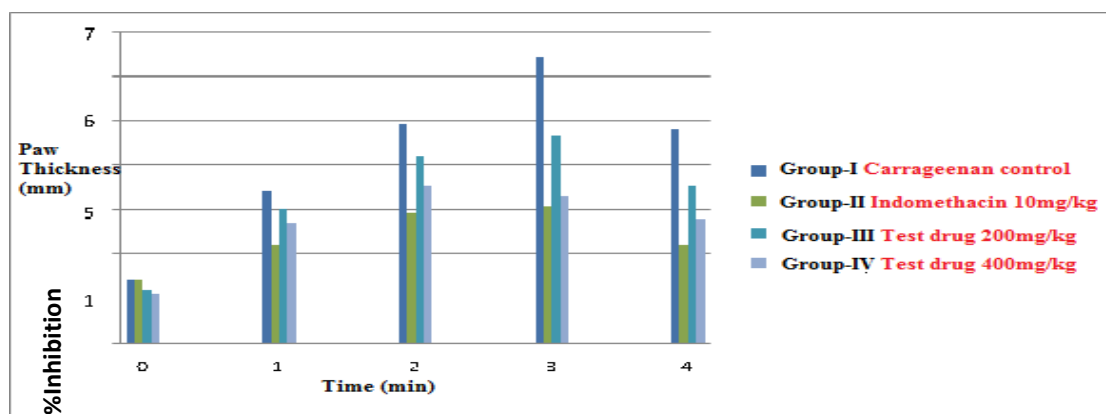
The anti-inflammatory effect of the ethanolic leaves extract of *Indigofera mysorensis* on carrageenan – induced hind paw edema as shown in Table 4. The ethanolic leaves extract of *Indigofera mysorensis* at doses 200 and 400 mg/kg produced a significant effect

against carrageenan induced inflammatory effect. The dose of 400 mg/kg exhibited a significant inhibition of 48 % after 3 h, the effect increased after 3h (52%). Anti-inflammatory activity of ethanolic extract of *Indigofera mysorensis* showed significant and similar to that of indomethacine (10 mg/kg).

Table no 6: Anti-inflammatory activity of ethanolic extract of *Indigofera mysorensis* on Carrageenan induced paw edema method in Wistar rats.

ANIMALS	Paw thickness in mm					% Inhibition
	0 hour	1 hour	2 hour	3 hour	4 hour	
Group-I	1.4±0.03	3.4±0.06	4.9±0.06	6.4±0.05	4.8±0.02	-
Group-II	1.4±0.04	2.2±0.03**	2.9±0.04**	3.1±0.02**	2.2±0.04**	52
Group-III	1.2±0.02	3.0±0.04	4.2±0.03	4.7±0.01*	3.5±0.04**	27
Group-IV	1.1±0.01	2.7±0.04**	3.5±0.02*	3.3±0.06**	2.8±0.04**	48

Values were mean $\pm$ SEM, (n=6), *P<0.05, **P<0.01 Vs control.

**Fig 4: Anti-inflammatory activity of ethanolic leaves extract of *Indigofera mysorensis*, on carrageenan induced paw edema method in Wistar rats.**

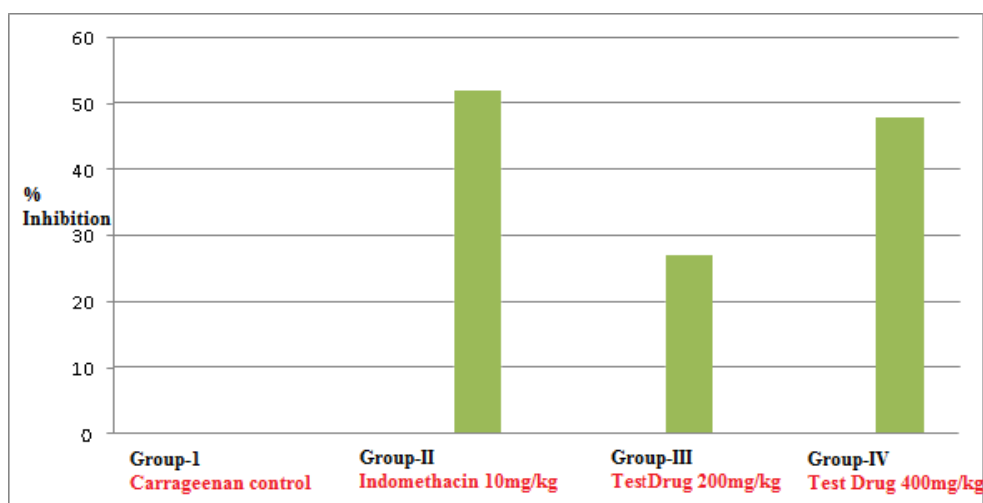


Fig 5: Anti-inflammatory activity of ethanolic leaves extract of *Indigofera mysorensis*, on carrageenan induced paw edema method in Wistar rats. Results are expressed as a percentage inhibition.

Cotton Pellet-Induced Granuloma Method in Rats

The anti-inflammatory effect of the ethanolic leaves extract of *Indigofera mysorensis* assessed by using cotton pellet induced granuloma method in Wistar rats. The ethanolic leaves extract of *Indigofera mysorensis* showed significant anti-inflammatory activity at 200 and 400mg/kg dose. After 7 days, the mean weight of granulomatous tissue surrounding the threads was significantly lower for the group treated with *Indigofera mysorensis* extract as compared to the control group.

Among the two doses 400 mg/kg showed maximum decreased formation of granuloma tissue. The results indicate that *Indigofera mysorensis* at dose level of 200mg/kg and 400 mg/kg produced a significant decrease in the weight of granuloma 38.16 ± 0.04 (7.4% inhibition) and 34.58 ± 0.04 (16.1% inhibition) respectively. Among the two dose 400mg/kg showed the slightly lower reduced weight of granuloma than standard drug dexamethasone 28.92 ± 0.04 (29.8% inhibition).

Table no 7: Anti-inflammatory activity of ethanolic extract of *Indigofera mysorensis* on cotton pellet induced granuloma pouch model Wistar rats.

ANIMALS	Granuloma weight (mg)	Percentage of Inhibition (%)
Group-I	41.24±0.04	---
Group-II	28.92±0.04**	29.8
Group-III	38.16±0.04**	7.4
Group-IV	34.58±0.04**	16.1

Values were mean $\pm$ SEM, (n=6), **P<0.01 Vs control.

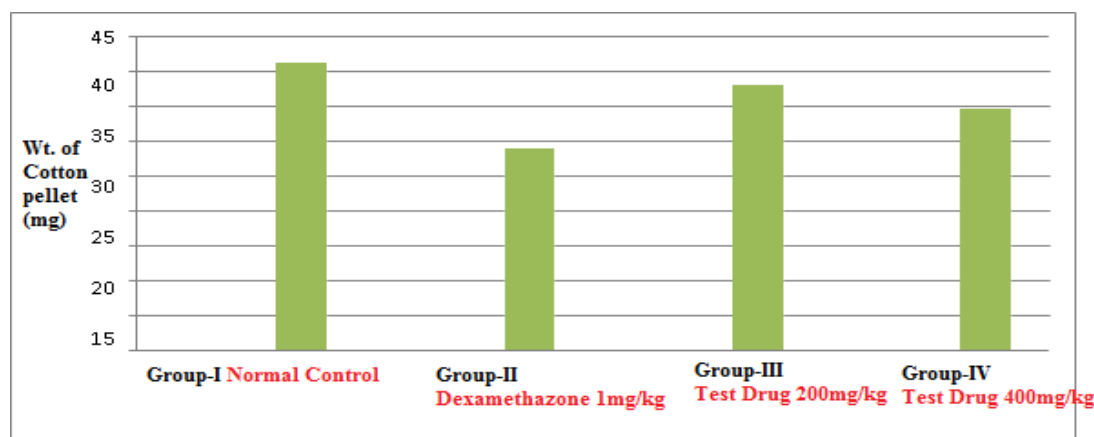


Fig 6: Anti-inflammatory activity of ethanolic leaves extract of *Indigofera mysorensis*, on cotton pellet-induced granuloma in rats.

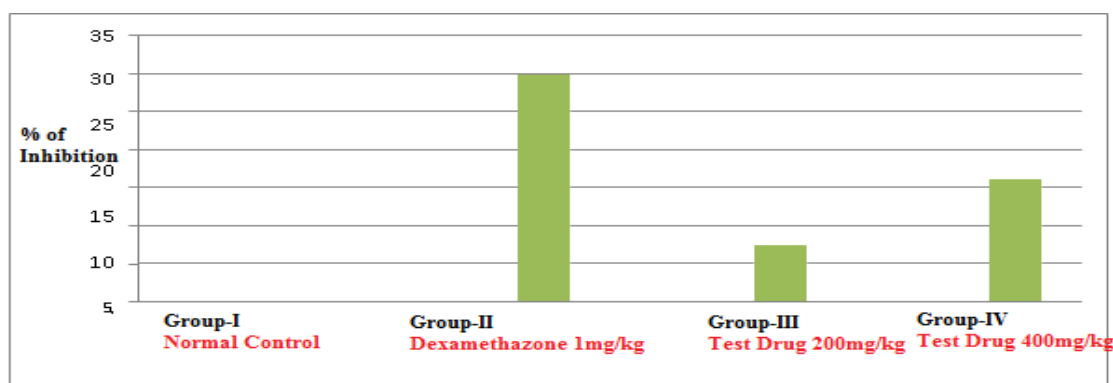


Fig 7: Anti-inflammatory activity of ethanolic leaves extract of *Indigofera mysorensis*, on cotton pellet-induced granuloma in rats. Results are expressed as a percentage of inhibition.

SUMMARY AND CONCLUSION

The present study entitled “Evaluation of analgesic, anti-inflammatory effect ethanolic leaves extract of *Indigofera mysorensis*” deals with the exploration of pharmacological and phytochemical screening of the selected Indian medicinal plant *Indigofera mysorensis* belonging to the family Fabaceae. The results obtained from the preliminary phytochemical screening of *Indigofera mysorensis* extract showed the presence of alkaloids, Carbohydrates, Glycosides, Flavonoids, Tannins, Proteins, Amino Acids as shown in Table 1. It was reported that the flavonoids frequently found in plants possess analgesic, anti-inflammatory activity. The plant was collected and got authenticated. Approval was obtained from committee for the purpose of control and supervision of experimental animals (CPCSEA) and institutional animal ethics committee (IAEC), proposal number CPCSEA/IAEC/JLS/15/05/21/06. The plant was shade dried and crushed. It was pulverized and extracted with ethanol using soxlet apparatus. The resulting extract was concentrated. The study of the plant *Indigofera mysorensis* was done by using mice with the oral doses of 5, 50, 100, 1000 & 2000 mg/kg body weight of extract and no mortality was observed for 24 hours. Thus, dose was identified as per OECD423 Guidelines. As for the analgesic effect, the leaf extract appears to act via the central and peripheral mechanisms of analgesia by using hot plate, tail immersion and Acetic acid induced writhing animal model. Anti-inflammatory effect of plant extract was done by using carrageenan-induced paw edema in rats and cotton pellet granuloma techniques. The Present study showed that the ethanolic leaves extract of *Indigofera mysorensis*, possess peripheral and central analgesic activity in animal model. The *Indigofera mysorensis* leaves extract shows anti-inflammatory activity in different animal model. Flavonoids and tannins are the major constituents of *Indigofera mysorensis* leaves, which maybe responsible for its Analgesic and Anti-inflammatory activity.

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