Research Article

Study of the Ethanomedicinal Plants of Bhopal District of M.P. with Hepatoprotective activity

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INTRODUCTION

Ethnomedicine is a branch of biological science which deals with the medicinal use of plants based on ethnic knowledge. Harda is a district rich in forest wealth which was surveyed during 2011 – 12 and some plants used by the tribals for hepatoprotective activity were observed. Patel sapan (2009), have also did the same type of work of Baitul district of M.P. Juneja D., (2008), have also reported the ethnobotanical and ethnomedicinal plants of Harda district area. The present paper deals with the survey of such plant based on folklore information used in hepatic disorders.

MATERIALS AND METHODS

Harda is newly formed district of M.P. lies at 22º20'30", north latitude and 77º5'30" east longitude at an average elevation of 933 M.S.L. Its climate is monsoonal and shows seasonal variations in temperature, atmospheric pressure, wind velocity, rainfall and relative humidity. The average of maximum and, minimum temperatures is 32.11ºc and 20ºc respectively. Average rainfall is 1852mm according to 2000 – 2001 censuses. Total population of Harda is 190398 approximately. The head quarter town of harda district situated in 22º21' north and 77º6' east. On the great Indian peninsula railway416 miles from Bombay.

EXPERIMENTAL BIOASSAY

Plant material

Two plants were selected for Hepatoprotective activity according to folklore information to observe on albino rats. The details of the collection of the selected plants, their fresh and dry weight, ash content, %age yield is shown in the table. These plants are

I) Sphaeranthus indicus
II) Solanum nigram

Sphaeranthus indicus: S. indicus of family Asteraceae is a common indigenous herb which grows plentifully in the northern and southern India in the fields of Narmada river bank of M.P. The whole plant was used of both plants for the study and was collected from villages of Harda district of M.P. the collected plant material was shade dried and powered to 40 – 60 mesh size.

Solanum nigram: S. nigram of family solanaceae is a very common weed found in cultivated and fallow fields as well as in the shady places of gardens. It is also found in services of walls and floors of ancient buildings. The whole plant was collected from villages of harda district of M.P. during rainy season and was dried in shade and was powered to 40 – 60 mesh size.

Extraction of plant materials

The dried plant material of 40-60 mesh size were put in the soxhlet apparatus for soxhlation. The solvents used were n-Hexane, Petroleum ether and Ethanol. The extract was concentrated in vacuum rotrary evaporated below 40ºc.

S. no.	Name of plant	Parts used	Dry Wt. of plant material	Wt. of extract obtained	% yield of extract	Wt. of material before burning	% yield ash content
1.	Sphaeranthus indicus	Whole plant	205gm	7.22gm	3.52	5gm	40%
2.	Solanum nigram	Whole plant	209gm	5.45gm	1.6	5gm	43.8%

Protective effect of extract on Carbon tetrachloride induced different biochemical parameters in the serum of rats.

Parameter	Group – I control with LP only	Group – II LP +CCL_4	Group – III LP+CCL_4+CF 50 mg/kg b.w.	Group – IV LP+CCL_4+CF 100mg/kg b.w.	Group – V LP+CCL_4+CF 200mg/kg b.w.	Silymerin 100mg/kg b.w.
Aspartate transaminase%	22.42±0.86	35.72±1.48	32.92±1.30	25.68±1.20	23.79±1.20*	24.64±1.28
Alanine transaminase%	25.12±1.54	63.20±2.98	56.20±2.68	40.28±2.14	29.98±2.16*	26.98±2.61
Alkaline phosphatase %	69.84±3.82	122.32±3.42	120.40±3.40	85.30±3.40	78.40±3.52*	75.08±3.14
Total protein (mg/100gm serum)	6.82±0.46	4.28±0.18	4.92±0.26	5.42±0.44	5.96±0.43*	6.14±0.40
Total lipid (mg/100g serum)	128.46±5.62	252.78±8.92	234.82±7.42	182.24±6.12	146.42±5.14*	138.24±5.22
Triglycerides	8.18±0.62	14.12±1.62	14.02±1.38	12.96±1.16	9.24±0.55*	9.02±0.52
Cholesterol (mg/100gm serum)	62.38±3.21	101.02±5.24	93.14±5.12	81.62±4.14	78.69±4.08*	63.21±4.12
Phospholipid (mg/100g serum)	119.30±6.84	250.32±12.08	214.22±10.08	156.28±8.02	140.24±8.32**	146.30±8.64

*P<0.50 as compared to group - I
**P<0.10 as compared to group – II (value are mean ± SE from 6 animals in each group)

The effect of plant extracts on different biochemical parameters in the serum of rats. The data presented in the table revealed the decrease level of serum transaminase in the animals treated with plant extracts.this may be due to the stabilization of plasma membrane and hepatoprotection against the effect of CCL_4 and decreased ALP concentration which evidences the normal functioning of the hepatic cells.

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