

COMPARATIVE CHARACTERIZATION OF AQUEOUS EXTRACTED PHYTOCHEMICAL FROM MEDICINAL PLANTS WITH NSAIDs

Rajesh Hanote¹, Anil Kumar^{1*}, S.R.Gayakwad¹, Rajendra Chouhan², B.D. Nagle³

¹Department of Biotechnology & Zoology, V V M, Betul, MP.

²Department of Zoology, Govt. MLB Girls PG College, Bhopal, MP.

³Department of Zoology, J.H. Govt. PG College, Betul, MP.

Article Received on
28 June 2015,

Revised on 18 July 2015,
Accepted on 12 Aug 2015

*Correspondence for

Author

Anil Kumar

Department of
Biotechnology V V M,
Betul, MP.

ABSTRACT

In this investigation as comparative analysis between allopathic medicine likewise NSAIDs it is standardized by pharmaceuticals approaches as an anti-inflammatory drugs, with extracted phytochemical of some selected medicinal plants and applied physical parameters such as pH, Viscosity, Surface tension and absorbance for characterization and evaluation of their numerical values who are determine its anti-inflammatory properties of extracted phytochemicals.

INTRODUCTION

In just many circumstances absorbed on inflammation Diseases pose important health challenges at world level.^[1] particularly in assessment of the fact that the occurrence of resistant inflammatory,^[2] and the adversative side effects associated with prolonged use continue to slow down the application of effective anti-inflammation,^[3] This makes imperative the need for the development of safe and potent alternatives of NSAIDs (Non-steroidal anti-inflammatory drugs).^[4] The various kinds' medicinal plants (*Terminalia arjuna*, *Terminalia tomentosa*, *Caesalpinia pulcherrima*, *Tinospora cordifolia* and *Bauhinia variegata*),^[5, 6, 7, 8, 9] may be effective against inflammatory diseases. Thus the events and master plan on phytochemicals materials may be as novel anti-inflammatory agents for the possibilities offered by their unique chemical and physical properties. In this content phytochemicals mainly are studied for their anti-inflammatory potential against several types of inflammation diseases. Thus the studies on phytochemical could be very useful, because all drugs have a risk of side effects, including NSAIDs. It is important to understand the risks

and benefits of a drug before deciding to take it. Possible risks of all NSAIDs include, side effect is stomach problems like bleeding, ulcer and stomach upset and high blood pressure, fluid retention causing swelling, such as around the lower legs, feet, ankles and hands, kidney problems and heart problems etc.

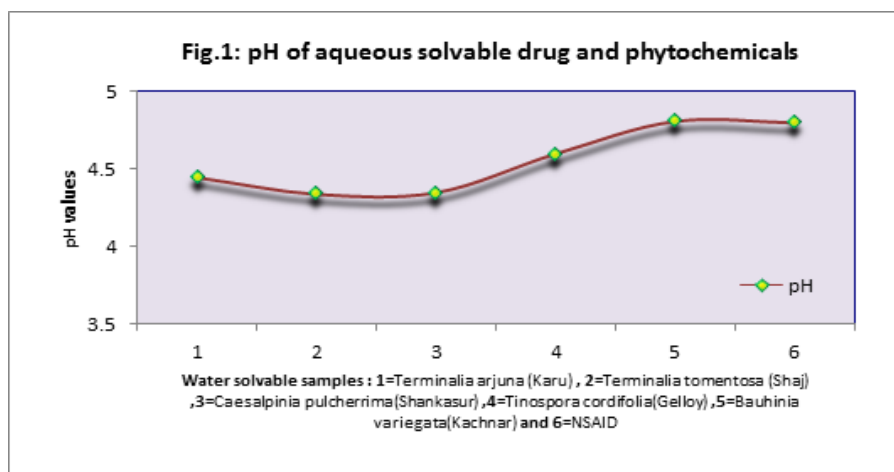
MATERIALS AND METHODS

The collection of medicinal plants forest area of betul district in sterilized polythene bags and NSAIDs purchased from medical store. Desterilized of the plants material by tap water and distilled water and dry it at RT, after that plants material again dried at moisture free in hot air oven at 45°C. Dried plants material grinded at homogenate form and taken 10gm of each to extraction in 30ml aqueous by soxhlet and evaporated water to dry the samples at powder form, taken 100mg of each powder was re-suspended in distilled water for determination of applying various parameter such as Viscosity, surface tension, pH, and UV-Spectroscopy for characterization and compared of investigated data with 100mg NSAIDs.

RESULTS AND DISCUSSIONS

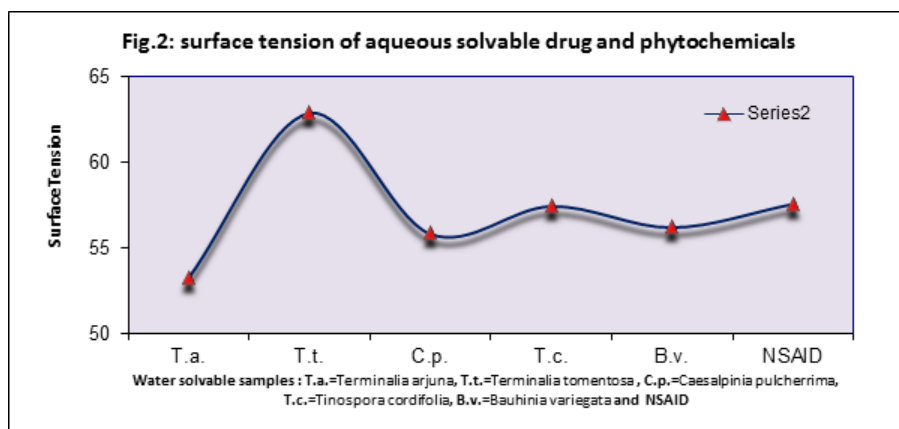
The gained numerical values of all applied parameters such types analysis and interpretation data values:

pH values: the pH 4.67 values of sample NSAIDs was dissolved in distilled water at homogenate stage and also gained similar values of pH 4.70 of phytochemicals extracted from *Bauhinia variegata* and very low pH 4.42 values given by *Caesalpinia pulcherrima*. It are have very miner fluctuation of pH in which pH 4.40-4.80 range values of all sample details showed in figure No 1.

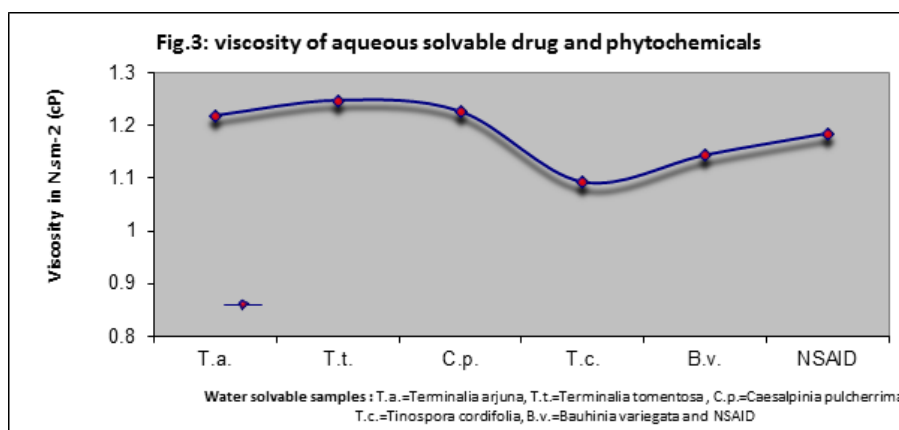


Surface tension: gained data numerical values of surface tension measured by The stalagmometric method is to measure the weight of the drops of the fluid falling from the

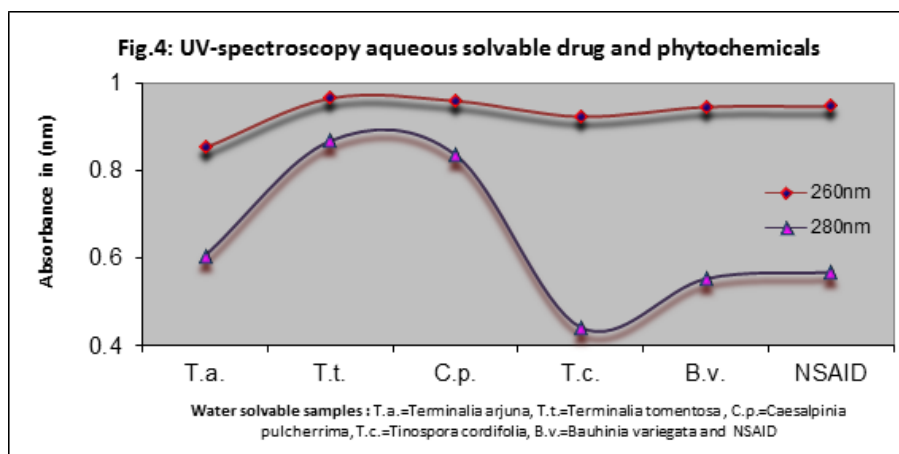
capillary action in which maximum PDN 63 drops gained from *Terminalia tomentosa* and minimum PDN 52 drops from *Terminalia arjuna* while the NSAIDs have PDN 57drops it is similar as *Tinospora cordifolia* detailed showed in figure No.2.



Viscosity: The viscosity of any liquid is a measure of resistance and stress correspondence their thickness. When dissolved sample in distilled water then change of flow rate of liquid their numerical valued data in which NSAIDs have viscous time 78 sec. and extracted phytochemicals viscous time gained in range 68 sec. to 85sec. in which *Tinospora cordifolia* have minimum values and *Terminalia tomentosa* have maximum values details showed in figure No.3.



Absorbance: to determine the concentration of dissolved equal volume of each sample in distilled water and know their absorbance at different two wavelengths such as 260nm and 280nm. Result was performing at 260nm all sample given absorbance between 0.800-1.000 it was very similar NSAIDs to extracted phytochemical. When result was 280nm maximum fluctuated between 0.400-0.840, in which *Bauhinia variegata* was given 0.502 it very close to 0.512 of NSAIDs



CONCLUSIONS

Phytochemicals is an essential for various kind diseases without any side effects, while, allopathic medicine including NSAIDs has been more side effect on human health. This project is very useful beneficial in future to provides an interesting opportunity for novel anti-inflammatory diagnosis. The present study focuses on the development and searches a novel ideal protocol of methods and replaces too allopathic medicines. Plants materials extracted phytochemical may be an alternate and replace of NSAIDs in future applying for as candidate against to inflammatory diseases.

REFERENCES

1. Ying Lu and James Markowitz, "Inflammatory bowel disease in adolescents: What problems does it pose", *World J Gastroenterol.*, 2011; 17(22): 2691–2695.
2. Marta Gonzalez-Castejon, Arantxa Rodriguez-Casado, "Dietary phytochemicals and their potential effects on obesity: A review", *Pharmacological Research.*, 2011; 64: 438–455.
3. J.O.C. Ezeonwumelu, A.N. Omar, A.M. Ajayi, A.G. Okoruwa, J.K. Tanayen, D.M. Kiplagat, O.A. Okpanachi, S. Abba, I. Ezekiel, A.N. Onchweri, C.O. Okonkwo, F. Byarugaba, "Phytochemical screening, acute toxicity, anti-inflammatory and antipyretic studies of aqueous extract of the root of *Flueggea virosa* (Roxb. ex Willd.) in rats", *Int J Pharm Biomed Sci.*, 2012; 3(3): 128-135.
4. Inger L. Meek, Mart A.F.J. van de Laar and Harald E. Vonkeman, "Non-Steroidal Anti-Inflammatory Drugs: An Overview of Cardiovascular Risks", *Pharmaceuticals.*, 2010; 3: 2146-2162.
5. P. Doorika and T. Ananthi, "Antioxidant and Hepatoprotective properties of Terminalia arjuna Bark on Isoniazid Induced Toxicity in Albino rats", *Asian J. Pharm. Tech.*, 2012; 2(1): 15-18.

6. Arun Bhimarao Joshi, Aswathi M, Maya Bhobe, “*Terminalia tomentosa* Roxb (Ex Dc) Wight & Arn: Phytochemical Investigation, *AJADD.*, 2013; 1(3): 224-231.
7. C. R. Pawar¹, R. B. Kadtan, A. A. Gaikwad and D. B. Kadtan, “Pharmacognostical and Physico–Chemical Standardization of Leaves of *Caesalpinia pulcherrima*”, *IJRPC.*, 2011; 1(4): 998-1002.
8. S.S. Singh, S.C. Pandey, S. Srivastava, V.S. Gupta, B. Patro, A.C. Ghosh , “Chemistry And Medicinal Properties of *Tinospora cordifolia* (Guduchi)”, *Indian Journal of Pharmacology.*, 2003; 35: 83-91.
9. Santanu Saha, E.V.S. Subrahmanyam, K.S. Chandrashekarand Shashidhara C. Shastry, “*In Vivo* Study for Anti-inflammatory Activity of *Bauhinia variegata* L. Leaves”, *Pharmaceutical Crops.*, 2011; 2: 70-73.