

STUDIES IN INDIGENOUS UTEROTONIC DRUGS (A PRELIMINARY NOTE)

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Various medicinal plants have been claimed to possess uterotonic properties in indigenous literature and mention has been made of their therapeutic efficacy by Basu and Kirtikar (1). Ayurvedic practitioners still use some of these drugs for initiation of contraction of uterus at term. An attempt was made, therefore, to screen a few of such plants for their stimulant effect.

After establishing the pharmacognostic identification of the plant materials (listed in the table) hot aqueous extracts were prepared by the method described earlier by Tewari *et al* (6), so that one *ml.* of this extract was equivalent to 0.5 *gm.* of the powdered plant material. All the drugs were screened by using isolated rat uteri by the method described by Burn (2). Isolated guineapig uteri, isolated rabbit uteri, isolated human uterine strips and dog uteri *in situ* were also employed for further studies.

A qualitative estimation of uterotonic activity has been presented in the Table.

TABLE
Comparative Uterotonic Actions of Drugs on Uterus

Sl. No.	Botanical names	Hindi names	Parts used	Isolated Rat uterus	Isolated Guinea-pig uterus strips	Isolated Rabbit uterus strips	Dog uterus in situ	Isolated Human uterus strips
1.	<i>Annona squamosa</i> Linn.	Sharifah	Stem & Leaves	+++	++	+++	0	++
2.	<i>Anagallis arvensis</i> Linn.	Jonkhamari	Stem	+++	+++	++	+	++
3.	<i>Paeonia emodi</i> Wall	Udsalap	Tubers	++	++	++	++	+++
4.	<i>Uraria lagopoides</i> DC	Pitvan	Stem & Leaves	++	+++	++	0	++
5.	<i>Bombax malabaricum</i> DC	Deokapas	Seeds	++	++	++	+	+
6.	<i>Abroma augusta</i> Linn	Olatkambal	Stem	++	++	+	0	+

The signs refer to the following grades of uterotonic activity :
+++ , excellent; ++ , good; + , poor; 0 , negative or no effect.

SUMMARY

Six medicinal plants (listed in the Table) have been reported in Ayurvedic system of medicine to be useful in uterine disorders. Sporadic attempts were made in the past

to elucidate the uterotonic effect of some of these drugs. Mention may be made of the work of Jamwal and Anand (4), Dhawan and Saxena (3) and Saha, Savini and Kashinathan (5). However, the number of species used by these workers has been limited and as will be observed from the present communication, the species variation is quite considerable with these drugs. The effect of hot aqueous extracts of the selected plant material was studied because the drugs are used in this form in Ayurvedic system of medicine.

This preliminary screening indicated that all the drugs chosen were uterotonic in nature in varying potencies. The doses required to elicit an initial contraction range from 1 ml. to 4 ml. As the uteri were isolated and for all practical purposes the autonomic innervation does not play a significant role on the action of drugs on the uterus it can be safely presumed that drugs were musculotropic in action. From the perusal of the Table one can safely infer that the best drug in this investigation is *Paeonia emodifolia* Wall. This drug showed a definite uterotonic activity on all the uteri studied and the dose response curve was a linear one.

REFERENCES

1. Basu, B.D. and K.R. Kirtikar, *Indian Medicinal Plants*, 2nd. ed., Published by L.M. Basu, Allahabad 1933.
 2. Burn, J.H., *Practical Pharmacology*, 1st. ed., Blackwell Scientific Publication, 1952, Oxford.
 3. Dhawan, B.N. and P.N. Saxena. Evaluation of some indigenous drugs for stimulant effect on rat uterus. *Ind. Jour. Med. Res.* **48**, 808, 1958.
 4. Jamwal, K.S. and K.K. Anand. Preliminary screening of some reputed abortifacient indigenous plants. *Ind. J. Pharm.* **24**: 218, 1962.
 5. Saha, J.C., E.C. Savini and S. Kashinathan. Ecbohic properties of Indian Medicinal Plants. *Ind. Jour. Med. Res.* **49**: 130, 1961.
 6. Tewari, J.P., K.C. Dutta and S.S. Mishra. Preliminary pharmacological examination of *Piper Chaba*, Hunter. *Labdev. J. Sci. Tech.*, **2**: 117, 1964.
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