Chapter 3

Drug Review

Contents

1. Katuki
2. Talishpatra
Drug Review

*Kapha* is the predominant factor for formation of *Ashmari* (Urinary Calculi) and also the *samabaya* (Causative factor) *karana* of *Ashmari* [86]. So highly effective *kaphanashak* drug *Talishpatra* (*Abies wehbiana, Lindl*) is selected for this study having no reference in classical *Samhitas* for its action on cholelithiasis (gallstone). Drug like *Katuki* (*Picrorhiza kurroa Royle-ex-Benth*) were selected not only for its *kaphanasak* (*kapha pacifier*) & *kaphanihsarak* (expectorant) action but also for *Yakriduttejaka* (hepatostimulant), *pittasamak* (pacifier of *pitta*), *rakta sodhak* (blood purifier) and *lekhana* (attenuating).

1. **Katuki**:

Source:
The herb originated in and continues to grow primarily in the Himalayan Mountains [86].

1.2. Botanical name: *Picrorhiza kurroa* Royle-ex-Benth [86].

1.3. Sanskrit synonyms: Katuka, Tikta, Katurohini, Kandaruha.

1.4. Regional name [86]:

- **English-** Picrorhiza, Hellebore;
- **Hindi -** Katki, Kuru, Kutki, Katuka;
- **Bengal-** Katki, Kuru, Kutki;
- **Gujrat-** Kadu, Kuru, Kanara- Katukarohini;
- **Malayalam-** Katukurohini, Katurohini, Kadukrohini;
- **Maratha-** Kutaki, Kutuki, Katikulki;
- **Punjab-** Nilkant, KamalphuL, Kaur;
- **Tamil-** Katukurohini, Kadugu-rohini, Katugurhorohini;
- **Telegu-** Katuka-rogoni, Katuka-rani, katukarohini, Kati;
- **Oriya-** Katuki,
- **Assam-** Katki, Kutki, Kash Kour;
1.5. **Varga/Gana:** The varga/ gana differ in the different Nighantu.

1.6. **Botanical classification:**

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division</td>
<td>Magnoliophyta</td>
</tr>
<tr>
<td>Class</td>
<td>Magnoliopsida</td>
</tr>
<tr>
<td>Order</td>
<td>Solanaceae</td>
</tr>
<tr>
<td>Family</td>
<td>Scrophulariaceae(^{87})</td>
</tr>
<tr>
<td>Genus</td>
<td>Picrorhiza</td>
</tr>
<tr>
<td>Species</td>
<td>Kurroa</td>
</tr>
</tbody>
</table>

1.7. **Botanical description:**

Small herb with creeping rhizome, bitter in taste and grows in rock crevices and moist, sandy soil. Rhizome is hard and is about 6 to 10 inch long. The leaves of the plant are flat, oval, and sharply serrated; Leaves are 2 to 4 inch long. The flowers, which appear June to August, are white or pale purple and borne on a tall spike; manual harvesting of the plant takes place October to December. Another name of *Katuki* is *chkrangi* means presence of finger mark in the steam\(^{88}\). Katuki have two varieties, white and black. White variety has a very bitter, sharp, pectoral, laxative, brain tonic, emetic, good in paralysis, used in liver complaints, menstrual disorders, epilepsy, pain in joints, scabies, rats and dogs bite. Black variety is less bitter, purgative, expectorant, antipyretic, and useful in piles, inflammation\(^{86}\).

**Height of herb:** 6-10 inch. **Height of leaves:** 2-4 inch\(^{89}\).

1.8. **Distribution:**

It is common in Alpine Himalayan areas from Kashmir to Sikim and north-west Himalayan at an altitude of 5000 to 110000 ft. The plant grows in mountainous places and bare hill sides as well as on the ledges of rocks.

1.9. **Properties:**

*Guna- Ruksha*
Rasa- Tikta  
Vipak- Katu  
Virya- Shita.

"Katukastikatustiktā ātipitattāpadālajit
vatasārkākasvāsaj varahṛdrēcanci ca sā" (Rāj Nighantu)
katuka is katu (Pungent), sita (cold), tikta (bitter). It cure the sitapitta (allergic rashes, urticaria), balash (tumour), arochok (anorexia), swas roga (breathing difficulty) and fever (pyrexia).

1.10. Views according to different Nighantu:
Table 2. The guna of katuki described by different Nighantu which has been given by table.

<table>
<thead>
<tr>
<th>Properties</th>
<th>R.N. 98</th>
<th>B.P.N. 91</th>
<th>D.N. 92</th>
<th>K.N. 93</th>
<th>S.N. 94</th>
<th>M.P.N. 96</th>
<th>P.N. 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varga/ gana</td>
<td>pipaladyi</td>
<td>Haritakyadi</td>
<td>Gudachyadi</td>
<td>Aushudi</td>
<td>Asthavarga</td>
<td>Abhayak</td>
<td>Satapuspadi</td>
</tr>
<tr>
<td>Rasa</td>
<td>Katu Tikta</td>
<td>Tikta</td>
<td>Katu Tikta</td>
<td>Katu Tikta</td>
<td>Tikta</td>
<td>Tikta</td>
<td></td>
</tr>
<tr>
<td>Guna</td>
<td>Laghu, Sita Ruksha</td>
<td>Laghu</td>
<td>Laghu Ruksha, Sita</td>
<td>Laghu Ruksha, Sita</td>
<td>Laghu Ruksha, Sita</td>
<td>Bhedan</td>
<td>Dipam</td>
</tr>
<tr>
<td>Virya</td>
<td>Sita</td>
<td>Sita</td>
<td>Sita</td>
<td>Sita</td>
<td>Ushna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vipak</td>
<td>Katu</td>
<td>Katu</td>
<td>Katu</td>
<td>Katu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prabhāb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dosa</td>
<td>Kapha</td>
<td>Pitta Kapha</td>
<td>Pitta Kapha</td>
<td>Pitta Kapha</td>
<td>Pitta Kapha</td>
<td>Pitta Kapha</td>
<td></td>
</tr>
<tr>
<td>Samak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapeutic Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Krini, Swas, Daha, Jwar</td>
<td>Jwar, Raktavikar, Kashta, Krimiroga, Yakrit-Roga, Kama, Bibandha</td>
<td></td>
</tr>
</tbody>
</table>

Jwar, Raktavikar, Kashta, Krimiroga, Yakrit-Roga, Kama, Bibandha
Fig 2. : Katuki. (*Picrorhiza kurroa* Royle-ex-benth).
According to the maximum Nighantus the rasa is tikta, virya is sita and vipak is katu so it pacifies kapha. It is pitta & kapha nasak. Also has an action on rakta and neutralizes the dosa of rakta which is mentioned by Raj Nighantu.

1.11. Scientific information:

It is also used to treat people with constipation due to insufficient digestive secretion and for fever due to all manner of infections. The bitter rhizomes of picrorhiza have been used for thousands of years in India to treat people with indigestion. Alcoholic extract decreased alkaline phosphatase, SGPT, SGOT and Thymol turbidity. Root and rhizome extract exhibited hepatoprotective activity in rat. The drug may be acting directly as virucide because it has many effects on virus when administered after vaccination. Plant extract suppresses inflammatory oedema at 1 hr., 3 hr. and 5 hr. post insult in rats. Macrophage depletion in animals did not affect anti-inflammatory effect of the extract. Picrorhiza in combination with the drug methoxsalen was found in a preliminary trial to hasten recovery in people with vitiligo faster than those receiving methoxsalen and sun exposure alone.

A series of cases of acute viral hepatitis in India were reportedly treated successfully by a combination of picrorhiza with a variety of minerals. Picrorhiza has also shown to reduce formation of liver cancer due to chemical exposures in animal studies.

1.12. Chemical composition:

From the roots of Picrorhiza kurrooa Royle - ex- Benth., seven cucurbitacin glycosides have been isolated and structurally elucidated mainly by NMR and mass spectroscopy. Four of them (4, 5, 6, 7) are new and two, the 2-O-glycoside of cucurbitacin B (25-acetoxy-2-beta-glucosyloxy-16,20-dihydroxy-9-methyl-19-norl anosta-5, 23-diene-3,11,22-trione) and the 2-O-glucoside of 23,24 didydrocucurbitacin B (25-acetoxy-2-beta-glucosyloxy-16,20-dihydroxy-9-methyl-19-norl anost-5-ene-3, 11-22-trione)
were so far not reported as constituents of this plant. The four new cucurbitacins could be identified as 2-beta-glucosyloxy-3, 16, 20, 25-tetrahydroxy-9-methyl-19-norlanosta-5, 23-diene-22-one, 2-beta-glucosyloxy-3, 16, 20, 25-tetrahydroxy-9-methyl-19-norlanosta-5-ene-22-one,

Structure of Kutkins (Kutkosides and Picrosides).

androsin as active compound preventing allergen and platelet-activating factor induced bronchial obstruction in guinea pigs in vivo (10 mg/kg p.o.; 1 h prior to the inhalation challenge). Histamine release from human polymorphonuclear leukocytes in vitro was inhibited by other compounds yet to be identified.\textsuperscript{163}

1.13. Pharmacological activities:

Antipyretic, anti-inflammatory,\textsuperscript{104} hepatoprotective, smooth muscle relaxant, antispasmodic, antiviral, antibacterial, cholagogue, hypocholesterolemic, antioxidant, free radical scavenger, antimicrobial, immunomodulator, anti hepatotoxic.\textsuperscript{105}

1.13.i. Mechanism of action:\textsuperscript{106}

Mechanism of action of \textit{Picro rhiza kurroa} is not established. Therapeutic activity of the drug may be based on two mechanisms:

a. Kutkins alter the structure of the outer membrane of the hepatocytes in such a way as to prevent penetration of the liver toxin into the interior of the cell.

b. Kutkins stimulate the action of nucleolar polymerase A, resulting in ribosomal protein synthesis and, thus stimulates the regenerative ability of the liver and formation of new hepatocytes.

c. Apocyanin, is one of its constituents, has been found to exhibit powerful anti inflammatory effects on a variety of inflammatory models.

1.14. Parts used:

Mula (Bhowmic kanda) Dried Rhizomes.

1.15. Dose:

For \textit{Rechanertha} : 3-6 gms.

1.16. Special medicinal preparation:

Arogya bardhani, Katukadya louha, Tiktadi Kwath, Tiktadi ghrita etc.

1.17. Information from \textit{Brihattrayi}:

1.17.a. Information from \textit{Charak Samhita}:
Katuki is used as different medicinal form like powder, decoction, medicated oil, medicated ghritta, paste etc.

Charaka placed in varga like Lekhaniya (reduce corpulency), Balya (strength promoter), Bhedaniya (cathartic), Stanyasodhan (galacto-purificators), Sangasthapana (restoratives of consciousness), Prajasthapana (fertility promoters).

Used as enema, cure supti, ghritta is used for the sosa, jwar, peelha vriddhi, to treat the poison of Rajiman Sarpa, used to clean tooth and relieve pain of teeth, used for throat disease.

1.17.b. Information from Sushrut Samhita:

Used for Brana ropana, in vatavyadhi, kustha, visarpa, kaphaja Slipad, dantagata Nad, medicated oil use for Asthpan vasti and also disease gulma, raktapradar, vishrpa, mutrakriccha, ksaya.

1.17.c. Information from Astanga Hridaya:

It is placed on bitter group, useful in Jwar with burning sensation, gulma, udavarta, arsha, grahami, pandu, kusta, kamala, vishrapa, medicated ghee for eruption of teeth and ulcer healing.

1.17.d. Information from Chakra Dutta:

It useful in Jawar, visamjawara, jaratisar, grahami, arsha, pandu, hikka, ummad, apasmar, vatavyadhi, vatarakta, hridroga etc. as various preparations with other drugs in different form, like powder, decoction, oil, ghrita, etc.

2. Talishpatra


2.2. Sanskrit synonyms:

Talishpatradhya, Dhatri Patra, Shukadara.

2.3. Regional name:

English- Himalayan Silver Fir;
Hindi- Talishpatra;
Bengali- Talishpatra;
Drug Review

Tamil- Talishpatri;
Telagu- Talishpatri;
Canara- Talishpatri;
Bombay- Baraini;
Malayam- Taleesapatram;
Garhwali- Chili ragha, Morunda;
Kumaon- Ragha;
Nepali- Gobria sulah;
Bhutia- Durnshing;

2.4. Varga/ Gana:
Differs in different Nighantus.

2.5. Botanical classification:
- Kingdom: Plant
- Division: Embryophyta siphonogama
- Sub-Division: Gymnospermae
- Class: Coniferae
- Family: Pinaceae
- Genus: Abies
- Species: webbina

2.6. Botanical description:
Tall evergreen tree leaves more or less distichously, needle like, usually flattened. Cones erect scales thin, breaking away from persistent wood axis when ripe, the corpellary scales smaller than the placental but occasionally longer and projecting between them. Height of the tree is about 150-200 ft.

2.7. Distribution:
Widely distributed on higher ranged of Himalayan area at 7000-12000 ft as well as in Sikim, Bhutan etc.

2.8. Properties:
Guna- Laghu, Tikshna.
Ras- Tikta, Madhur.
Vipak- Katu.
Virya- Ushna.

2.9. Views according to different Nighantu:
“Talīspatram tiktopnam madhuram kaphavātanut kāsahikkā kayāś vāsacchaṅdididdvināśkṛt” (Rāj Nighantu¹³³).
Talīspatra is tikta(bitter), usna virya(hot in potency), madhur(sweet) after digestion. It pacifies kaphavata. It is useful in kasa (cough), hikka (hiccough), ksharoga (phthisis), swas (breathing difficulty) and disease related to vamana (vomiting).

Table 3. The guna of Talīspatra which is described by different Nighantu given below by table.

<table>
<thead>
<tr>
<th>Property/ R.N.²²²</th>
<th>B.P.N.²²²</th>
<th>D.N.²²²</th>
<th>K.N.²²²</th>
<th>S.G.²²²</th>
<th>M.P.N.²²²</th>
<th>P.N.²²²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varga/ Guna</td>
<td>Pipaladi</td>
<td>Kapuradi</td>
<td>Debkaru</td>
<td>Aushadi</td>
<td>Kapuradi</td>
<td>Kapuradi</td>
</tr>
<tr>
<td>Rasas</td>
<td>Tikta</td>
<td>N.M.</td>
<td>N.M.</td>
<td>Tikta</td>
<td>Madhur</td>
<td>N.M.</td>
</tr>
<tr>
<td>Gunas</td>
<td>N.M.</td>
<td>Dipan</td>
<td>Pachan</td>
<td>Grah</td>
<td>N.M.</td>
<td>N.M.</td>
</tr>
<tr>
<td>Vyras</td>
<td>Usna</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>Usna</td>
</tr>
<tr>
<td>Viryas</td>
<td>Madhur</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
</tr>
<tr>
<td>Prabhak</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
<td>N.M.</td>
</tr>
<tr>
<td>Dosa Samak</td>
<td>Kapha</td>
<td>Vata</td>
<td>Amlomok</td>
<td>Kapha</td>
<td>Pitta</td>
<td>Kapha</td>
</tr>
<tr>
<td>Therapeutic use</td>
<td>Swasa</td>
<td>Kasa</td>
<td>Swasa</td>
<td>Kasa</td>
<td>Swasa</td>
<td>Kasa</td>
</tr>
<tr>
<td></td>
<td>Swasa</td>
<td>Kasa</td>
<td>Swasa</td>
<td>Kasa</td>
<td>Swasa</td>
<td>Kasa</td>
</tr>
</tbody>
</table>

N.M.- Not Mentioned.

3.10. Scientific Information:
Fig 3.: Talispatra (*Abies webbina. Lindl*)
During the determination of LD50 values of extracts of *Abies webbiana*, it was observed that the methanol extract (MEAW) produces sedation of animals. This led to investigation of the effect of MEAW on sleeping time in mice. When various doses of the methanol extract (100, 150, and 200 mg/kg body weight) were administered alone, no hypnotic activity was observed.

### 3.11. Chemical Composition:

Abiesin, Betuloside and methyl betuloside isolated from leaves. N-triacontanol and β-sitosterol also obtained from leaves.

### 3.12. Pharmacological Activities:

The therapeutic index of methanol extract may be favorable to open a new vista on combination therapy of hypnotics and may also against inflammation. When administered orally it exhibits significant antitussive activity as compared to the control in a dose dependent manner. It is useful in asthma and haemoptysis.

Powder increases appetite, aid digestion, stops vomiting and diarrhoea.

### 3.13. Parts Used:

Patra (leaf).

### 3.14. Dose:

**Churna** (powder)- 2-5 gms.

### 3.15. Special Medicinal Preparation:

*Talishadya Churna, Talishadi Modak.*

### 3.16. Information from *Brihattraayi*:

#### 3.16.a Information from Charaka Samhita:

Decoction is used for *kaphaja* disorders, powder *talishadya churna* in *kasa, swas, aruchi, pleeha vridhi, kalyanaka ghrita* jwar, kasa, vatarakata, *pandu*, etc.

#### 3.16.b. Information from Sushrut Samhita:

Used for *Sirovirachan*, *ropana* (healing) of *saddya vrana* (acute ulcer), paste used in *vatarakata*, *anjana, pittabidagdha dristhi*, *mahakalyan ghrita* for *gulma, kasa, jwar, swas, kshaya, unmad* etc.
3.16.c. Information from Astanga Hridaya:

Used for gurgling in sarad ritu (autumn), paste as drinks for garbhasanga (obstructed labour), tejovatyadi ghrita for vatavyadhi, arsa, grahami, rogamedicated ghee for sosa, paste for swelling and itching eye, oil for healing of ulcer, etc.

3.16.d. Information from Chakra Dutta

Used in rajyakshma (pulmonary tuberculosis), kasa (Cough).