

Epilepsy is a neuropsychiatric disorder. In India, about 10 million people suffer from epilepsy with a prevalence of about 1.9% in rural areas and 0.6% in urban locales. Despite the availability of many antiepileptic drugs (AEDs), nearly one in three patients with epilepsy who have access to AEDs continue to have seizures, and a similar proportion experience nonacceptable AED-related adverse effects (Brodie, 2005; Loscher, 2002). Thus, there is need for the development of better and safer AEDs with improved clinical profiles. Plant extracts are some of the most attractive sources of new drugs, and have been shown to produce promising results for the treatment of epilepsy (Kasture et al., 2002). In this context, the present study was therefore under taken to evaluate the pharmacognostical, phytochemical, standardization and anticonvulsant potential of *Pyrus pashia*.

Objective

- Pharmacognostical and phytochemical standardization of *Pyrus pashia* fruit as per WHO guidelines for establishing its safety, quality and efficacy.
- The study is an attempt to scientifically validate the traditional claims of fruits of *Pyrus pashia* in epilepsy.
- Isolation of its potent bioactive constituent and establishing its mechanism of action.



Plant Collection & Authentication

Pharmacognostic Standardization

- Qualitative & Quantitative Estimation of Phytoconstituents
- Successive Fractionation Standardization
- Isolation of major component in EPP

- Cold Maceration(Ethanol)
- Anticonvulsant screening

ACUTE MODEL

- ✓ Maximal electroshock induced convulsion
- ✓ Pentylentetrazole induced convulsions

PLAN OF WORK

MECHANISTIC STUDIES

CHRONIC MODEL

- ✓ Pentylentetrazole kindling
- ✓ **Morris Water maze**
- ✓ **Neuronal apoptosis** (Propidium iodide staining)
- ✓ **Apoptotic markers** (cytochrome c, caspase 3, caspase 9)
- ✓ **BDNF**
- ✓ **Molecular studies By measuring gephyrin protein**

- Motor function activity
- ✓ **Rota rod,**
- ✓ **Actophotometer**

- EEG studies in PTZ challenged animals

- Evaluation of antioxidant activity in PTZ challenged animals

Isoniazid induced convulsion

Strychnine induced convulsion

Picrotoxin induced convulsion

4-Amino pyridine induced convulsion

NMDA induced convulsion

Effect on GABA A Flumazenil benzodiazepine antagonist