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## “Othalanga” Poison: A Potent Killer Unknown To Modern Medical Science

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### ABSTRACT

“Othalanga” is a poisonous fruit of a herb (*Cerbera odollum*) grown widely in marsh and swamp area. In Alappuzha district of our country several die every year by consuming this, either accidentally or with the purpose of suicide or homicide. Modern medicine has no antidote or any treatment for this, due to unawareness of this poison. An elaborate study on the details of “*Cerbera odollum*” and effective treatment for this poisoning is essential and solicited.

**Keywords:** “Othalanga”(*Cerbera odollum*); Toxic nature; fruit of “othalanga” (*Cerbera odollum*)

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## INTRODUCTION

Attempt of suicide by four athletic girl students of Sports Authority of India at Alappuzha in the Province of Kerala was widely reported<sup>1,2,3,4</sup>. Later, one of them succumbed to death. All of them consumed “othalanga”, a known poison yielding fruit of “odollum “(Cerbera odollum), tree seen in this part. Around 8000 people reported to hospitals in a year in this district due to “othalanga” poisoning and several of them died<sup>4</sup>. Seventy percentage of victims were women<sup>5</sup>. This is a cause of concern among women activist groups. The main reason for this large death rate is due to lack of an antidote or treatment available in Modern Medical Practice.

“Cerbera odollum” is a moderate sized evergreen shrub seen growing wild in salty swamp and marshy land of Alappuzha region of our country and at other South Asian countries<sup>6</sup>. This plant is preferred to make hedge between compounds. The plant is also known as suicide tree, killer tree, dog bane or pong-pong<sup>1,4,7,8</sup>. Its leaves are bright green closely set at the ends of the branches; flower is large white with yellow throat; fruits are large green with fibrous pericarp and seeds are usually solitary. The “othalanga” green fruit, is employed to kill dogs. The kernel of the fruit is an irritant poison producing part. Consumption of this leads to vomiting and purging, soon followed by collapse and death<sup>8</sup>. Poisoning from Cerbera odollum is very common in the Province of Kerala<sup>6</sup>. This is opted for suicide or homicide. The death due to accidental consumption is also present<sup>4</sup>. The fruit resembles unripe mango and children unknowingly consume this. The kernel of “othalanga” is mixed with food having spices to mask its taste and consumed for suicide or given for homicide. Adapted method of homicide is mixing powder of kernel with toddy or any alcoholic drink. Many homicides pass without the knowledge of family members as well as police<sup>9</sup>. The nut is also poisonous and preferred as narcotic<sup>8</sup>. A related species found in Madagascar and its nut was preferred for an ordeal poison, which was abolished in 1861<sup>10</sup>. Today “othalanga” is used for different industrial productions<sup>5,11</sup>.

Ayurveda, the oldest systematic medical practice in India, detailed the property and uses of different parts of the plant. The bark, leaves and milky juice are purgative and emetic. The leaves are used for some vitiated conditions and for skin diseases in children. The poisonous fruit is prescribed for the treatment of hydrophobia<sup>7</sup>. The bark, leaves and the milky juice are prescribed as purgative and emetic. The bark is used for ringworm infestations. In Ayurveda,

patients with “othalanga” poisoning are treated successfully. Patients are prescribed mainly decoction prepared from 48 grams (equivalent to old measure) bark of deodar (*Ciderus deodara*), to which 16 times water is added and heated in a mud pot till the content is reduced to one eighth. The filtered portion is given to patient<sup>12,13</sup>. Another mode of treatment is a single dose of a mixture of 30 grams rock salt with 30 grams “ghee” and 30 ml of tender coconut water<sup>12,13</sup>.

*Cerbera odollum* is an extensively toxic plant that relatively unknown to western doctors, including Forensic experts, chemists and analysts<sup>5</sup>. The reason may be victims are limited to few areas in the world. It is known, juice of fruit contains a poison material cerberin which is similar to digoxin seen in fox glove. Study on the latter revealed which is a calcium blocker in cardiac muscles disrupting heart beat<sup>10</sup>. ECG changes observed among them were sinus bradycardia, arrhythmia including SA block, combination of SA and AV block, atrial tachycardia and fibrillation of atria and ventricles<sup>14,15</sup>. In 2004 a team of French doctors including Toxicologists studied “othalanga” poisoning cases in Alappuzha district. They agreed the lack of knowledge would not allow Pathologists to identify the cause of death due to this poisoning<sup>16</sup>. A systematic study by the Modern Medical Science to understand the chemistry and the damage caused by this poison as well as a remedy for othalanga poisoning is due.

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