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Parthenium Poisonous effect and its Treatment

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Abstract:

Parthenium (Partheniumhysterophorus L.) is a weed that produces many seeds and has spread widely rapid growth, ability to spread via waterways and roadways , it is able to spread very quickly Parthenium was spread by vehicles or as a contaminant of seeds. It act as environmental, medical and agricultural hazards. They are also allergenic with pollen causing dermatitis and hay fever in human in livestock from prolonged feeding on parthenium, and milk and meat are tainted affecting their value. This weed is thought to cause allergic respiratory problems, mutagenicity in humans and severe reductions in crop production1. Sesquiterpene lactones (SQLs) are the most important allergens responsible for ACD of parthenium. This plant is not only harmful to agriculture but also is a major factor in multiple human diseases through contagious. Among these are asthma, Allergies, and Stomach diseases. It is used as an antioxidant, an anticancer agent, and an antitumor agent, and its extracts are often used pesticides to control diseases. Parthenium it has some toxic chemical composition due this it exhibits many harmful adverse effects but owing to many limitations associated with the conventional methods, management of parthenium still remains a challenge. Parthenium is considered as the number one dangerous terrestrial weed because of its harmful effects both to human and biodiversity. Many control measures are being used to manage this obnoxious weed. It has both useful effect and non useful effect.

Keywords: Parthenium hysteroporous, Dermatitis, Sesquiterpene lactones (SQLs), Allergic bronchitis, papule vesicular lesions.

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Introduction:

Parthenium hysterophorus is commonly known as congress grass or carrotgrass.It belongs to Asteraceae family It is an invasive plant species that disturbs cultivated areas, roadside vegetation, gardens etc. P.hysterophorusis considered as one of the worst weeds responsible for causing health problems in animals and humans. Parthenium weed is toxic to animals causing dermatitis with pronounced skin lesion on various animals including domestic animals. If eaten, it is responsible for mouth ulcers with excessive salivation. In addition it causes anorexia, purities, alopecia, diarrhoea and eye irritation[1]. Contact with the plant causes dermatitis and respiratory malfunction in humans, and dermatitis in cattle and domestic animals. It also is responsible for bitter milk disease in livestock when their fodder is polluted with *Parthenium* leaves. The main substance responsible isparthenin, which is dangerously toxic.Contact with this plant cause dermatitis and respiratory malfunction in humans, dermatitis in cattle and domestic animals due to the presence of toxin parthenin.It is a sesquiterpenelactone. In some researches the extract of parthenium results in significant reduction of WBC count which signifies with immune system, weakening abilty[2].It is a photodynamic substance causing primary photosensitization. Diarrhoea followed by cutaneous lesions characterised by itching etc. Human Health Parthenium roots can cause allergic diseases, such as photo dermatitis, asthma, heavy fever, skin rashes, excessive water loss, peeling skin, swelling, and itching of the mouth and nose . Some of the main elements contained in Parthenium are chlorogenic acid, anisic acid, p-anisic acid, caffeic acid, and benzoic acids, which are very harmful to humans[1]. Hand weeding in Parthenium-infested fields can cause Skin infections, allergies, eczema, fever, allergic rhinitis, dark spots, burning, and swelling around the eyes are all signs of long-term exposure to this herb. Diarrhea, extreme popular erythematous eruptions, and shortness of breath are all symptoms of P. hysterophorus. Respiratory symptoms normally start with increased fever and respiratory problems and become more severe after long years of incremental exposure, resulting in asthma and allergic bronchitis[1]. It may also affect grazing animals' welfare, milk production, and meat quality. P. hysterophorus- develop atrophic eruptions, alopecia, skin depigmentation, and anemia.

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In mature livestock, cause anorexia and dermatitis. When cattle consume Parthenium or they come into contact with the weed on a regular basis, poisoning may result. Rashes on the body, alopecia, loss of skin pigmentation, allergic skin reactions, dermatitis, diarrhoea, anorexia, and purities are all possible outcomes for those animals. Parthenium is a most dangerous weed and its control is very necessary.

Objectives:

1. To have known some knowledge of harmful effect of parthenium on human body
2. To have known management of the poisonous adverse effect of parthenium

Fig.1 Parthenium Grass

Impacts on Human Health or The Harmful Effects of Parthenium:

- Erythematous eruptions over much of the body.
- Alopecia and depigmentation of neck and shoulders.
- Oedema around eyelids and facial muscles.
- Diarrhoea followed by cutaneous lesions characterised by itching, erythematous eruption on the tip and base of the ear, neck sides of thorax, abdomen, knee joint.

Parthenium causing main issues on health. Its cause's allergy on humans in which the skin turns red and itchy. When the human physical contact to the parthenium it causes skin rashes and also causes dermatitis[11]. Parthenium causes dermatitis in which dermatitis the skin may be cause the skin blister, ooze, crust or flake off. Some of fallowed below

- Pollen allergy (Asthma, bronchitis)

- Airborne contact dermatitis
- Eczema
- Itching, irritation of the skin
- Stomach pain
- Cough
- Rigorous sneezing
- Black spots
- Respiratory malfunction
- Allergic rhinitis

The pollen grains, airborne dried plant parts, and roots of partheniumcause various allergies like contact dermatitis, hay fever, asthma, and bronchitis in human beings[2,3]. The common allergens found in this weed are Parthenin, coronopilin, tetraneuris, and ambrosin. Pollens of parthenium cause asthma (allergic bronchitis), especially in children playing outdoors. Contact of plant with the body causes dermatitis and the spread of the problem all over the body causes unbearable discomfort. Clinically the parthenium dermatitis is of five types, as discussed below.

(1) The classical pattern also known as airborne contact dermatitis affects the face, especially eyelids and/or neck, of chest, cubital, and popliteal fossae.

(2) The chronic actinic dermatitis (CAD) pattern involves the exposed areas such as forehead, rim of ears, cheeks, nape of neck, dorsae of forearms, and hands as lichenified papules, plaques, or papulonodules with relative sparing of nonsun exposed areas such as eyelids, retro auricular areas and undersurface of chin and depth of the skin folds;

(3) The mixed pattern (combination of classical and CAD pattern) manifests as scattered infiltrated scaly papules over the exposed parts and dermatitis over eyelids, flexures of extremities and neck;

(4) The photosensitive lichenoid eruption pattern presents with pruritic, discrete, flat, violaceous papules, and plaques over sun-exposed parts such as the forehead, ears, cheek, upper chest, and back, extensor aspect of forearms and dorsae of hands stimulating photosensitive lichenoid eruptions.

(5) The prurigonodularis-like pattern presents as multiple hyperkeratosis papules and nodules over extremity with characteristic histopathology features similar to prurigonodularis[2,3].

There no specific method of conformation of Pathenium toxicity. Yet Parthenium toxicity may be diagnosed based on:

1.History of grazing in fodder fields heavily infected with the weed

2.Appearance of dermatitis lesions by this samples collecting presence of toxic constituents.

PM lesions Includes

- Ulceration of muzzle, dental pads, tongue and palate
- Necrosis and severe congestion of liver and gastrointestinal tract
- Distended gallbladder and gelatinous changes in the hilus of kidneys.
- Punch out ulceration on the esophagus and abdominal folds.
- Ulceration throughout abdomen and edema of lungs[4,5].

Management of parthenium:

- Moving the individual away from the place of its growth.
- First aid treatment such as soap water used to clean the affected area.
- Visharilepa- Tila , Navaneeth, Ajadugdha this paste used to apply on affected skin lesion.
- Apply mustered oil to effected area.
- Lakshmi vilasa rasa
- Kasthuri Tablet
- Punhaguna tail
- AmodiniVati
- Dashang Agada
- MahatiktakaLepa
- Nasal Spray
- Nasya Karma
- Jyatyadighritha

Discussion:

Parthenium hystrophorus is a noxious weed, it is opine the number one dangerous terrestrial weed because of its harmful effects both to humans and to biodiversity[8]. this weed contains most powerful toxic substance is Parthenin this weed is considered to be cause of allergic respiratory problems, contact dermatitis, Mutagenicity in human and livestock. The major sesquiterpene lactone of Parthenium weed that is Parthenin a photodynamic substance[6]. Hence as seen with other photodynamic agents ingestion of pathenium weed result in primary photosensitization causing liver pathology and skin reaction Parthenium dermatitis. Pollen play role, mainly in respiratory allergy[9]. Hence more often causes allergic rhinitis rather than bronchial asthma. We can control by these herbicides chemicals chlorimuron ethyl, glyphosate, atrazine, ametryn, bromoxynil, and metsulfuron, are known to be very effective in controlling this weed[7]. Used always certified seeds. Wash agriculture apparatus before to use and after use.

Conclusion:

It is act an accidental irritant Poison, it is an aggressive weed being invasive with poses a serious threat to the environment and

biodiversity.Physician should be aware about the specific poisoning conditions hence there will no chances of diagnostic and clinical misinterpretation. Allergic contact dermatitis (ACD) to Parthenium hysterophorus is the most common cause[10]. There is proper history, proper diagnosis, proper investigation along with proper treatment following will get high success rate to physician as well as high dignified name and fame. As we know the physician who use medicine over diseases should be nectar and victor over morbid condition not to destructor, as well this parthnenium weed act both victor and destructor action , it is mainly depend upon the implication. However parthenium has two faced effect both harmful and beneficial action in the world.

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