



Review Paper

# Pinta–A Treponemal Infection to the Skin

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## Abstract

*Pinta is the oldest and mild form of the treponemal infections caused by Treponema carateum. The word pinta means painted and it was originated from Spanish. Lesions, red to bluish-black colored spots, splotches and discoloration of the skin are the major manifestations of this skin related bacterial infection. Reports suggest that pinta has virtually disappear from countries of Latin America and is now restricted to the Philippines and some areas of the Pacific. The following aspects of pinta such as its origin, prevalence and mode of transmission along with the clinical conditions, diagnostic methods, treatments and preventive measures are briefed in this review.*

**Keywords:** Bacterial, Carateum, Infection, Pinta, Skin Lesions, Splotches, Spots, Treponema.

## Introduction

**Synonyms:** Azul, Carate, Empeines, Lota, Mal de Pinto, Tina, Purupuru.

Pinta, a rare infectious tropical disease affecting the skin is caused by the bacterium *Treponema pallidum carateum* which is morphologically and serologically indistinguishable from the organism that causes syphilis<sup>1</sup>. It is a human skin disease endemic to Mexico, Central America and South America. This disease is classified as a treponematoses, because it is an infectious disease caused by treponemas (a genus of spiral-shaped bacteria (spirochetes)).

The infection is acquired in childhood or early adolescence among people living in unhygienic conditions preferably in males. Pinta progresses through three distinct stages, which are characterized by various skin lesions and discoloration. The exposed lower extremities on the legs and ankles (65-85% of cases), the buttocks, arms, hands and face are the most common areas affected with primary lesions. The lesions remain active and infectious for many years leading to extensive depigmentation and acral dyschromia. Disorders associated with dyspigmentation such as tinea versicolor, vitiligo, melasma, leprosy are often in the differential diagnosis of pinta. Other organ systems are not affected. Exposed areas of the skin such as the face and extremities are most often affected.

## Epidemiology

Rural, poverty-stricken areas of northern South America, Mexico and the Caribbean have been reported with the primary incidence of pinta. About 1 million cases of pinta were reported in Central and South America in 1950. 20% seropositivity is

found in remote rural areas of Panama in 1980's. No cases are yet reported in the United States. The current prevalence of pinta is unknown, but only a few hundred cases have been reported per year<sup>1</sup>. Data on prevalence of pinta are limited but it might remain endemic in remote regions of Mexico (states of Oaxaca, Guerrero, Michoacan and Chiapas) where it was common in 1980's. Among Indian tribes in the Amazon region of Brazil, Colombia and Peru<sup>2</sup> has also reported with this disease.

**Pinta – At A Glance**

Feature	Pinta
Organism	T. carateum
Modes of transmission	Skin-to-skin
Usual age of acquisition	Late childhood
Primary lesion	Non ulcerating papule with satellites, pruritic
Location	Extremities, face
Secondary lesion	Pintides, pigmented pruritic
Infectious relapses	None
Late complications	Non destructive, dyschromic macules.

## Mode of Transmission

This disease is believed to be transmitted by repeated direct person to person skin contact. Treponemas are abundant in early lesions and persist through to the late dyschromic stage. The

bacteria enter the skin through a small cut, scratch or other skin damage. High atmospheric humidity intensify the lesions, increasing their oozing and infectiousness<sup>3</sup>.

### Reservoir

Those aged 15-30 years with long-standing skin lesions comprise the main reservoir.

### Presentation

The least severe of treponemal infections pinta confined to the skin, is transmitted by infection-to-skin contact and produces a raised papule which enlarges and becomes hyperkeratotic (scaly/flaky) after an incubation period of two to three week. The exposed surface of arms and legs produces the lesions followed by local lymph node enlargement. Further thickening and appearance of flat lesions (pintids) all over the body occurs after three to nine months which are generally resolved. In certain cases a minor affected proportion may get worsened into the development of an end stage disease, pronounced as widespread pigmentary change with a mixture of hyper pigmentation and depigmentation which can be disfiguring<sup>4</sup>.

### Symptoms of Pinta

Skin gets only affected by pinta which is initiated by flat, itchy, reddened areas on the hands, feet, legs, arms, face or neck. Several months later the same areas on both sides of the body preferentially where bones are close to the skin appears with slate-blue patches. The patches later on lose their colour and thickening of the affected skin on the palms and soles occurs.

### Diagnosis

Clinical diagnosis is usually done, but as in case of yaws and bejel serological tests for syphilis, such as rapid plasma reagin (RPR), VDRL (venereal disease research laboratory) test and TPHA (T. pallidum haemagglutination), will be positive and on dark field microscopy of samples taken from the early papules are seen with spirochetes.

### Treatment

The disease can either be treated with drugs such as penicillin, tetracycline, azithromycin, chloramphenicol or can be prevented through contact tracing by public health officials. Endemic treponematoses including pinta, yaws and bejel can be effectively treated by a long acting single intramuscular injection of penicillin<sup>5</sup>. It is usually treated very effectively with a single intramuscular injection of Benzathine penicillin G (Bicillin) in the upper outer quadrant of the buttock. The dose is 600,000 units for children and contacts under 6 years of age. 1.2 million units for those aged 6-15 years and 2.4 million units for adults. Alternate antibiotics can be given to those who are allergic to penicillin. Erythromycin or tetracycline 500mg by mouth four times a daily for 15 days is recommended for those

allergic to penicillin. Children between the ages of 8-15 years should receive half the dose. Tetracycline should not be given to pregnant women and children under 12 years of age<sup>6,7</sup>.

The treatment policies recommended by WHO are as follows: If the prevalence of clinically active infection in the community is over 10%, give of Benzathine penicillin G to the entire population. If the prevalence of clinically active infection cases are 5-10%, give Benzathine penicillin G to the patients, their contacts and to all children below the age of 15 years. If the prevalence of clinically active infection is under 15% treat all active cases as well as households and other obvious contacts with Benzathine penicillinG<sup>8</sup>.

### Complications and Sequelae of Pinta

Chancre, VDRL positive, Hypo pigmentation, Gumma, Skin ulceration and Facial ulcers etc.

### Prevention

In pinta an attack on social and economic conditions of life is as important as an attack on the biological cause. Recrudescence of the disease is apt to occur unless environmental improvement is promoted<sup>9</sup>. For example: Improvement of personnel and domestic hygiene. Adequate water supply. Liberal use of soaps. Better housing conditions. Improvement of quality of life. Promoting community hygiene. Conducting various health education programmes. People residing in the areas more prone to pinta and travelers to such areas should avoid skin to skin contact with the infected people. People residing in the affected area should use insect repellants, mosquito nets etc as insect bite aids in the spread of pinta. Should keep the houses clean and should not leave stagnant water as it will attract mosquitoes and other insects. Sustained surveillance, integrated into strengthened primary health care must be maintained to detect and treat new or missed cases including their contacts and treatment failures.

### Conclusion

It can be concluded that there is a need to conduct various health education and awareness programs for the proper and complete eradication of the disease. The standards of living, personnel and environmental hygiene must be improved. Equitable access to pinta prevention and treatment should be addressed early in the eradication effort.

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