

**Clinico-Epidemiological Study of Non-Venereal Dermatoses Involving Male Genitalia****Rabi Narayan Nanda<sup>1</sup>, Chandan Kumar Gantayat<sup>2</sup>, S Jaganath Subudhi<sup>3</sup>, Manoj Kumar Ram<sup>4</sup>, Prasenjeet Mohanty<sup>5</sup>, Diptiranjani Bisoyi<sup>6</sup>**<sup>1</sup>Senior Consultant, Department of Dermatology, ESI Hospital, BBSR, Odisha, India<sup>2</sup>Assistant Professor, Department of Medicine MKCG MCH, Berhampur, Odisha, India<sup>3</sup>Assistant Professor, Department of Surgery MKCG MCH, Berhampur, Odisha, India<sup>4</sup>Asst. Surgeon, Department of Dermatology, SCB MCH, Cuttack, Odisha, India<sup>5</sup>Professor, Department of Dermatology, SCB MCH, Cuttack, Odisha, India<sup>6</sup>Asst Professor, Department of Dermatology, SCB MCH, Cuttack, Odisha, India

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**Abstract:****Introduction:** Non-venereal dermatoses of male external genitalia include a spectrum of disease of varied etiology. Any genital dermatoses whether venereal or non-venereal in both sexes is associated with immense stress and anxiety, because of the lack of proper knowledge in the field.**Aim:** To determine clinical and epidemiological pattern of non-venereal genital conditions in the male.**Material & Methods:** This was an observational study undertaken in patients with genital skin lesions attending the outpatient department of dermatology at a tertiary health-care center. A detailed history was taken; the genital and dermatological examination was performed. Patients with genital diseases were excluded from the study.**Result:** Majority of the patients were in the age group of 21-30 years. In this study genital alone comprised of 130 (65%) accounting for most patients followed by genital and skin involvement in 49 (24.5%), oro-genital and skin in 14 (7%) and oro-genital in 7 (3.5%). Pearly penile papules (PPP), scabies, lichen planus, pemphigus vulgaris cases were most common lesions in only genital lesion, genital- skin lesion, orogenital lesion and orogenital-skin lesions respectively.**Conclusion:** Nonvenereal genital dermatoses are more frequent than STIs, as shown by this study. Various causes of non-venereal dermatoses are highlighted in this study. The topic is complicated because it involves a wide range of illnesses with different aetiologies, both non-sexual and sexual.**Keywords:** Genital dermatoses, HIV, nonvenereal genital dermatoses, STI.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Non-venereal dermatoses of external genitalia are the term for conditions that are not sexually transmitted. Genital dermatoses are classified into venereal and nonvenereal dermatoses. They frequently get confused with sexually transmitted infections, which can cause patients to feel anxious and physicians have difficulty with confirming a diagnosis. [1,3] Finding the cause or exacerbating factor could save the patient suffering of ongoing discomfort and a restricted social life, which will significantly improve the dermatological life quality index (DLQI). [2,4] Finding the etiology of nonvenereal disease and treating those patients is a challenge to dermatologists. [5,6] Genitalia alone do not have to be the site of non-venereal dermatoses. [8] It might impact not just the skin but also other mucosal membranes. The research was required to determine the clinical and

epidemiological pattern of non-venereal genital problems. The goal of the study was to link several clinical characteristics with the pattern of non-venereal dermatoses presenting with genital lesions.

**Materials and Methods**

It was a cross-sectional prospective study conducted at department of dermatology of tertiary medical college from March 2013 to October 2014 (period of 18 months). Male patients with the non-venereal genital lesions with or without lesions over skin and other mucosa, were included in the study. Some venereal conditions which are transmitted through non-venereal route were included. Patients clinically confirmed any venereal diseases and not cooperative during history taking and examination were excluded from the study.

Detailed history including age, marital status, education status, the site of affection and history of exposure were recorded. Physical and genital examination was done to see any associated lesions elsewhere in the body. Investigations like HIV test, KOH mount, Gram's stain, histopathological examination were done where ever needed. The patients satisfying the inclusion and exclusion criterion as mentioned were included in the study. Clinical photographs were taken after obtaining an informed written consent. The study included 200 male patients presenting with genital lesions, oro-genital lesions, genital

and skin lesions of non-venereal origin. A proforma was prepared to record details of the patients regarding demographic parameters, examination findings and diagnosis. The data was tabulated and analyzed.

### Results

**Demographic Data:** The prevalence of non-venereal genital lesion during the period was found to be 29.8 per 10000 patients attending dermatology department. Majority of the patients were in the age group of 21-30(27%) followed by 31-40 (26.5%).(Table-1)

**Table 1: Age Distribution**

Age in yrs	No.
<10	11
11-20	22
21-30	54
31-40	53
41-50	35
51-60	11
61-70	12
>70	2

The non-venereal genital lesions were grouped in to four groups according to the involvement of sites affected as genital, genital and skin, oro-genital and oro-genital and skin lesions. In this study genital alone comprised of 130 (65%) accounting for the majority of patients

followed by genital and skin involvement in 49 (24.5%), oro-genital and skin in 14 (7%) and oro-genital in 7 (3.5%).Involvement of genitalia alone was found to be significantly higher than other groups.(Table-2)

**Table 2: Classification of Non-venereal genital lesions based on site of involvement**

Genital alone (%)	Orogenital (%)	Genital & Skin (%)	Orogenital & skin (%)
130 (65%)	7 (3.5%)	49 (24.5%)	14 (7%)

Among the non-venereal conditions pearly penile papules, scabies, lichen planus, pemphigus vulgaris cases were most common lesions in only genital lesion, genital-skin lesion, orogenital lesion and orogenital-skin lesions respectively. All the clinical images are listed here. (Table-3, Figure-1A-L, Figure-2A-F).

**Table 3: Distribution of non-venereal lesions involving only genitalia, genital and skin, orogenital and orogenital-skin**

	Only genital Lesion	Genital-Skin Lesion	Orogenital Lesions	Orogenital-Skin
Lesion	No (%)			
Pearly penile papules	33 (25.38)			
Candidiasis	17(13.07)		2(28.57)	
Vitiligo	14(10.60)	7(14.28)		
Psoriasis		2(4.08)		
Tinea		3(6.12)		
Scabies	3(2.30)	17(34.69)		
Lichen planus	4(3.07)	2(4.08)	4(57.14)	1(7.14)
Behcet's disease			1(14.28)	
Contact dermatitis	4(3.07)			
Molluscum Contagiosum		1(2.08)		
Paraphimosis	3(2.30)			
Lupus vulgaris	2(1.53)			
Fixed drug eruption	1(0.76)	6(12.24)		3(21.42)
Pemphigus vulgaris				8(57.14)

Lichen nitidus	2(1.53)	2(4.08)		
Angiokeratoma of Fordyce	4(3.07)			
Cellulitis Scrotum	1(0.76)			
Lichen simplex chronicus	2(1.53)			
Lichen sclerosus	7(5.38)			
Lichen Striatus		1(2.08)		
Calcinosis scrotalis	4(3.07)			
Sebaceous cyst	4(3.07)			
Zoon's balanitis	6(4.61)			
Phimosis	1(0.76)			
Folliculitis	5(3.84)			
Prepuccial gangrene & ulceration	1(0.76)			
Median raphe cyst	2(1.53)			
Nodular scabies	1(0.76)			
Porokeratosis	1(0.76)			
Scrotal dermatitis	5(3.84)	1(2.08)		
Reiter's disease		3(6.12)		
Sqamous cell carcinoma	2(1.53)			
Cutaneous larva migrans	1(0.76)			
BT Hansen		1(2.08)		
Seborrheic Dermatitis		1(2.08)		
Steven Johnson syndrome		1(2.08)		2(14.28)
Varicella		1(2.08)		
Total	130	49(100)	7(100)	14(100)



Figure 1: A-Multiple Sebaceous Cyst, B-Zoon's Balanitis, C-Scrotal Dermatitis, D-Lichen Planus, E-Angiokeratoma, F-Lupus Vulgaris, G-Lichen Striatus,H-Porokeratosis,I-Steven's Jhonson Syndrome, J-Calcinosis Scrotalis, K-Lichen Sclerosus with Zoon's Balanitis, L-Squamous Cell Carcinoma

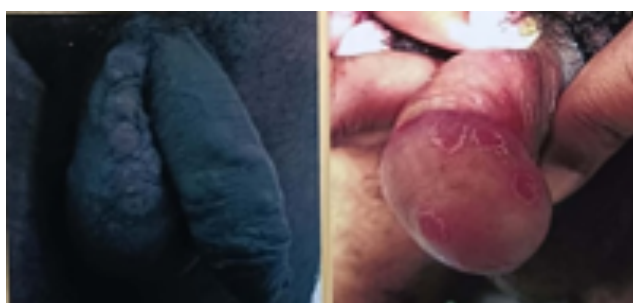


Figure 2: A- Nodular Scabies(left), Cicinate Balanitis(right)



Figure 3: B- oral(left) and genital(right) Lichen Planus



Figure 4: C-Angiokeratoma(left), Balanoposthitis(right)



Figure 5: D-Lichen Sclerosus et Atrophicus(left), Prepuce Gangrene in case of ALL (right)



Figure 6: E-Lichen Nitidus(left), Pearly Penile Papule(right)

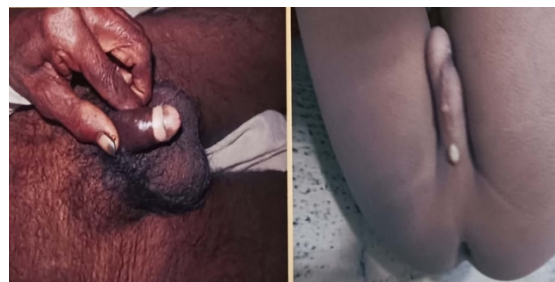


Figure 7: F-Vitiligo(left), Median Raphe Cyst(right)

Various other dermatological conditions and systemic illness associated with non-venereal genital lesions in this study were seen in 31.5% (63) of patients. (Table-4,5).

**Table 4: Association with other dermatoses**

Asteatotic eczema	1
Callosity	1
Androgenetic alopecia	3
Chronic urticaria	4
Acrochordon	2
Fissure foot	1
Aphthous ulcer	1
Acne vulgaris	7
Alopecia areata	2
Acute paronychia	2
Nummular eczema	2
Folliculitis	1
LSC	3
Senile purpura	1
Lupus vulgaris	1
Idiopathic onycholysis	1
Lichen planus pigmentosus	1
Hyperkeratotic eczema	2
Ichthyosis	1
Furuncle	1
Pityriasis versicolor	2
PMLE	3
Onycholysis	2
Psoriasis	2
Pityriasis alba	2
Pitted keratolysis	1
Nail pitting	1
Seborrhoeic dermatitis	2
Tinea	5
Seborrhoeic keratosis	2
Seborrhoeic capitis	1

**Table 5: Associated systemic illness**

Diabetes mellitus	19
ALL	1
Urinary tract infection	1
Hypertension	6
Osteoarthritis	3
Hydrocele	1

38 patients in the study gave history of sexual exposure. Among them 34 patients had venerophobia and that may be due to their high risk behavior. It was most commonly seen in patients with pearly penile papules.(Table-6)

**Table 6: Venerophobia**

Lesion	No(%)
Pearly penile papules	17(50)
Candidiasis	7(20.5)
Lichen planus	3(8.82)
Scabies	2(5.88)
Vitiligo	1(2.94)
Angiokeratoma	1(2.94)
Scrotal dermatitis	1(2.94)
Folliculitis	1(2.94)
Median raphe cyst	1(2.94)
Total	34(100)

## Discussion

Non-venereal genital disorder includes a wide array of diseases with varied etiology. Patients most of the time presented to general physicians who are not expertise in that field like dermatologist<sup>[7]</sup>. Less number of studies exist with regard to the prevalence and pattern of these diseases. So there is a need of more number of studies regarding nonvenereal genital diseases. Acharya et al<sup>[2]</sup> had done a study of 200 cases of genital lesions of non-venereal origin. Saraswat et al [9] had done a study of 100 cases of genital lesions of non-venereal origin in male. Karthikeyan K et al [10] had done a similar study on non-venereal dermatoses of male external genitalia. Khoo LS et al [11] had done similar study on male patients in Singapore.

The prevalence of non-venereal genital lesion during the period was found to be 29.8 per 1000 patients attending dermatology department in our study. In the study by Karthikeyan K et al the

overall prevalence of non-venereal dermatoses among the male patients was 14.1 per 10000. The age ranged from 4 to 76 years in the present study with mean age of 33.9, whereas the age range was from 1 month to 80 years in the study population by Acharya et al. The age range among the male population in Karthikeyan K et al [10] was 9 to 70 years with the mean age of 33.7 years. Most of the patients belonged to the age group of 21-30 (27%) in this study like Karthikeyan K et al and Saraswat et al where as in Acharya et al [2] majority were in the age group of 31-40 (31%). In this study, a total of 37 different types non-venereal diseases were detected. But it were 25 and 16 in Karthikeyan K et al study and in Saraswat et al study respectively. The most common disorder in our study was pearly penile papules like Khoo LS et al. But Acharya et al reported infections as commonest disorder contributing 40% cases. Saraswat et al and Karthikeyan K et al observed genital vitiligo as the most common dermatoses in 18% and 16% of patients respectively.

**Table 7: Comparison of various study result with present study**

Cases	Present study	Acharya et al	Karthikeyan et al.	Khoo LS et al	Saraswat et al
FDE	13	-	3	-	12%
LSC	2	-	2	-	-
LS	7	-	2	-	3
PS	2	1	5	-	-
SD	1	-	1	-	-
Vitiligo	21	5	16%	-	18%
SH	3%	-	14%	3%	7%
ANgiokeratoma	4	2	2	-	-
LN	4	4	4	-	-
Scabies	10%	40%	9%	-	-
Genital Candidiasis	19	13	5	-	-
Varicella Zoster	1	2	-	-	-
Tinea	3	2	22	-	-
Pyoderma	7	2	20	-	-
MC	1	-	-	-	-
Zoon's Balanitis	6	-	-	-	2
Pemphigus Vugaris	8	-	-	-	-
Circinate Balanitis	3	-	-	-	-
SCC	2	-	-	-	1
Venerophobia	34	-	-	-	-

(FDE-Fixed Drug Eruption, LSC-Lichen Simplex Chronicus, LS-Lichen Sclerosus, PS-Psoriasis, SD-Seborrheic Dermatitis, SH-Seborrheic Hyperplasia, LN-Lichen Nitidus, SCC-Squamous Cell Carcinoma)

Genital lichen planus(LP) was encountered in 11 patients, out of that 4 (36.36%) had genital lesion alone whereas 4 (36.36%) had oro-genital, 2(18.18%) had genital with skin involvement . 1 (9.09%) patient in our study had concurrent oral, genital and skin involvement. Erlap et al [12] had found oro-genital involvement in 18 (47.4%) and concurrent oral, genital and skin involvement in 17 (44.73%) patients out of 38 LP patients. malignancy risk exists, as in oral LP, and hence close follow up is essential.[19]

Three cases of fixed drug eruption were reported by Karthikeyan K et al [10], all due to cotrimoxazole over the glans penis, in contrast to our study where the number were 13(6.5%) of fixed drug eruption and Steven Johnson syndrome due to various medicines like piroxicam, paracetamol, cotrimoxazole, norfloxacin, nimuselide, ibuprofen and ayurvedic medicine. One study hypothesize that FDE may be a sexually inducible reaction. [14]

Irritant contact dermatitis was seen in 4 (2%) patients due to chloroxylenol and salicylic acid in our study. But other study found that positive reactions to (chloro-)methyl-isothiazolinone and to benzocaine frequently among patients with anogenital complaints. [15] Positive reactions to cinchocaine (6.6 %), bufexamac (3.5 %) and benzocaine (2.4 %) were observed significantly more often among patients with anogenital dermatitis. [16] Specific allergens that were statistically significantly more common in patients with anogenital involvement included cinnamal (or cinnamic aldehyde), dibucaine, benzocaine, hydrocortisone-17-butyrate, and budesonide.[17]

Pearly penile papule (PPP) was the most common finding in our study. Majority of them were diagnosed during examination for other dermatological conditions. Other names of PPP are hirsutoid papilloma, papillomatosis corona penis, and corona capillitii. [18]

Prepuccial ulceration with gangrene was seen in a twelve year old boy undergoing chemotherapy for acute lymphoblastic leukemia. Similar lesion were seen in other studies also. [13]

### Conclusion

The prevalence of non-venereal genital lesion during the period was found to be 29.8 per 10000 patients attending dermatology department. Among the four groups localized genital lesions were found to be significantly higher followed by genitalia with skin, concurrent oro-genital with skin and oro-genital lesions. Predominant lesions were pearly penile papules in genital alone and scabies among genitalia with skin involvement. Drug reaction was the majority among concurrent oro-genital and skin involvement and lichen planus among orogenital. Two disorders can present in any from either localized to genitalia or spilling on to other mucous membrane and skin surfaces namely lichen planus and fixed drug eruption. None of the other similar studies had looked in to the aspect of venerophobia. True prevalence and pattern can be known only with combined clinics. These clinics ideally should be multidisciplinary, with input from dermatology, gynaecology, genitourinary medicine, pathology, paediatrics and plastic surgery, as well as from psychologists and psychosexual therapists.

The study was quite useful in understanding the clinical and etiological characteristics of various types of non-venereal dermatoses. True prevalence and pattern can be known only with combined clinic and a large sample size.

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