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Original Article

A clinico-demographic profile of 110 male patients with genital ulcer(s)

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Abstract

Objective To assess the magnitude of male genital ulcer (MGU) and its clinico-demographic profile in patients attending dermatology OPD and STI clinic of a tertiary care hospital in the eastern part of India.

Methods The study was institution-based cross-sectional descriptive study conducted over a period of one year. All the male patients presenting to Dermatology OPD and STI clinic with complaints of genital lesions were screened for genital ulcer/s. Those having genital ulcer and giving consent for participating in the study were included in the study. At the end of study period, data were analyzed.

Results 110 patients with MGU among 22,528 male patients attending Dermatology OPD and STI clinic were included in study and relative prevalence rate was calculated as 4.88 per 1000. Non-sexually transmitted ulcers (non-STU) [65.5%] were leading cause of MGU. Among sexually transmitted ulcers (STU), genital herpes was the most common disease. Dermatitis-related ulcer, scabies related ulcer, and Zoon's balanitis (plasma cell balanitis) were most common non-STU. Positive history of sexual exposure was found in around 53.2%, 97.4% and 22.2% of MGU, STU and non-STU, respectively. Commercial sex workers were the major sex partner in both STU and non-STU groups.

Conclusion Non-sexually transmitted ulcers were more common than sexually transmitted ulcers. History of sexual exposure was seen in both STU, and non-STU. Hence, history of sexual exposure should not bias clinician towards making a diagnosis of STU.

Key words
Genital ulcer, sexually transmitted ulcer, non-sexually transmitted ulcer.

Introduction

Genital ulcer disease has been defined as a syndrome characterized by ulcerating lesions on the penis, scrotum, vulva, vagina, perineum, or perianal skin.[1] Ulcerating lesions on male genitalia (MGU) can result from numerous infective or non-infective agents and some of them are sexually transmitted or acquired (STU), while others (non-STU) are not. However, in general usage, the term MGU is being equated with STU like syphilis, chancroid and genital herpes etc.[1] Moreover, most of the studies have focused on STUs only and hence the exact prevalence of MGU is difficult to determine. The annual incidence of genital ulcers is estimated to be around 20 million cases per year.[1] In one study done in Jamaica, the

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prevalence of genital ulcers among patients attending STI clinic was found to be 12.8% in 1990.[2] Similar prevalence rate for non-STU is not known. However, it is widely believed that STU are the leading cause of MGU.[1] Not much data are available regarding contribution of non-STU causes to MGU or about relative prevalence of different conditions among non-STD causes, especially in India.

Apart from causing huge psychosexual problems (male cause of dyspareunia, depression, relationship problems etc.),[3] they cause significant morbidity – both short term and in the long run (like tertiary syphilis) and sometimes, death (as in malignancy, if not treated).[4] In this era of HIV/ AIDS, MGU has assumed even more importance.[5] MGU has been associated with increased acquisition and transmission of the human immunodeficiency virus (HIV). Persons with genital ulcers are at higher risk for acquiring HIV than persons without ulcers.[6] In a 2001 study in Uganda, the presence of MGU was associated with an almost fourfold increase in the probability of HIV transmission.[1] Moreover, HIV-infected persons with genital ulcers may transmit HIV more efficiently than patients without ulcers.[7] All these studies have been done with STU cases. Thus, recognition and control of MGU may be important for HIV prevention. The interaction of non-STU and HIV infection is largely unknown and so far, ignored.

Few fields of medicine have shown changes as much as the sexually transmitted infections (STI). Therefore, it has been recommended that periodic surveillance of the etiology of genital ulcers in communities should be carried out to formulate appropriate empiric treatment regimens for ulcers. Moreover, demographic and clinical data regarding non-STU are largely lacking. Hence, this study was undertaken to assess the magnitude of MGU, as well as, its clinical profile in patients attending dermatology OPD and STD clinic of a tertiary care hospital in the eastern part of India.

Methods

The study was institution-based cross-sectional descriptive study. All the male patients presenting to Dermatology OPD and STI clinic with complaints of genital lesions were screened for genital ulcer/s. In this study, ulcers and erosions were considered together as "ulcer". Those having genital ulcer and giving consent for participating in the study were included in the study. Detailed history was taken and thorough clinical examination was done. The diagnosis was made clinically. However, in doubtful cases appropriate investigations, as guided by history and clinical examination, were done. The cases in which a diagnosis could not be made were excluded. All this were recorded in case record form. The study was conducted over a period of one year and at the end of study period, data were analyzed.

Results

In this study, 117 patients with male genital ulcer (MGU) were found among 22,528 male patients (1,982 from STI clinic and 20,546 from Dermatology Out-Patient Department) attending a tertiary care hospital of Eastern India in 303 working days over a period of one year. Seven cases were excluded from study (two patients refused to give consent for study and in five patients, diagnosis could not be confirmed as they did not turn up with histopathology report). A total of 110 patients were included in study for analysis. Relative incidence rate of MGU (110 patients) among male patients attending dermatology OPD and STI clinic (22,528 patients) was found to be 4.88 per 1000. Among 110 MGU patients, 38 patients were classified as sexually transmitted ulcer (STU), constituting

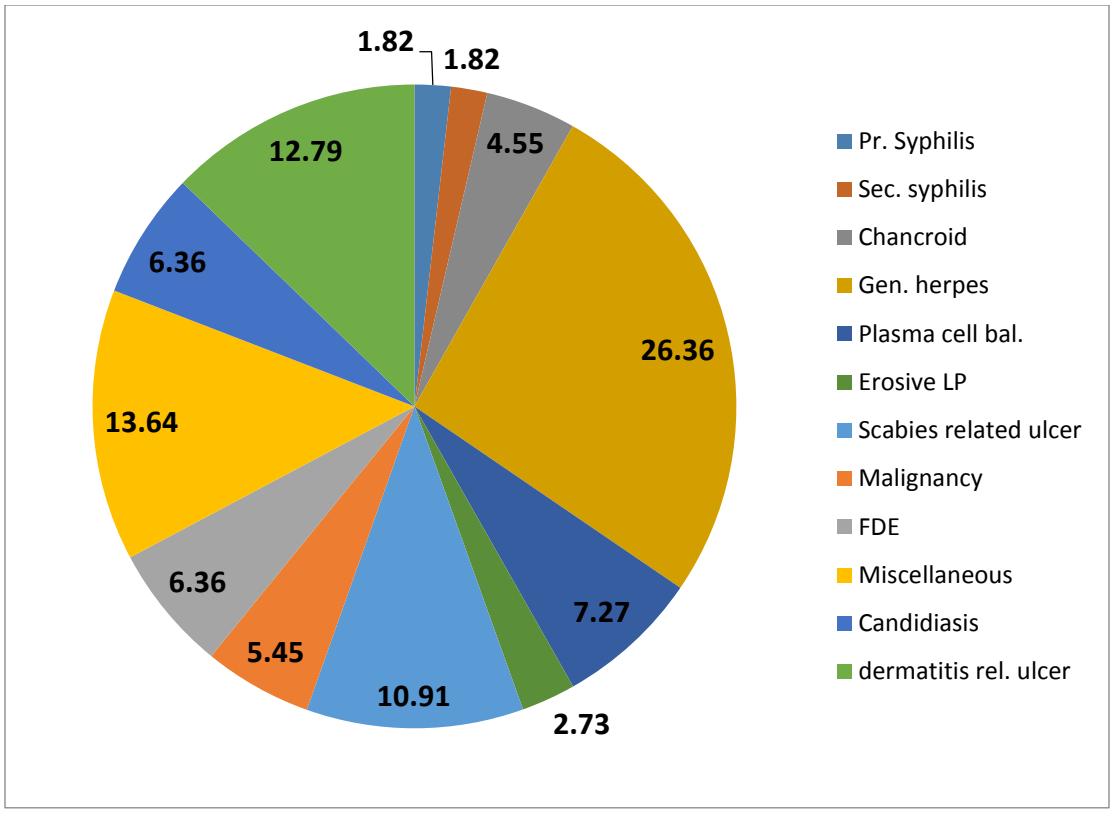

Figure 1 Relative prevalence of different male genital ulcers among study population.

Figure 2 Induration of prepuce along with a single linear ulceration in a case of lichen sclerosus et atrophicus (balanitis xerotica obliterans).

Figure 3 Well-defined ulcer on frenulum due to sexual trauma.

Figure 4 Multiples deep ulcers over shaft of the penis in a case of squamous cell carcinoma.

34.6% of total MGU. Rest 72 patients (65.4%) were non-STU. The leading cause of ulcers among MGU had been shown in Graph 2. Genital herpes is the leading cause of MGU (26.36%). Other STU constitute 8.19% of MGU-primary and secondary syphilis 1.82% each and Chancroid 4.55% **(Figures 2, 3** and **4)**. No case of donovanosis and lymphogranuloma venereum was found in our study. Other leading causes of MGU included miscellaneous group (13.64%), dermatitis-related ulcer (12.8%), scabies-related ulcer (10.9%), Zoon's balanitis (plasma cell balanitis) [7.3%], candidiasis (6.4%), fixed drug eruption (FDE) [6.4%], malignancy (squamous

cell carcinoma) [5.5%] and erosive lichen planus (2.7%). Miscellaneous group included four cases of papulonecrotic tuberculide, two cases each of lichen sclerosus, herpes zoster and bullous pemphigoid, and one case each of trauma during sexual activity, Behcet's disease, circinate balanitis, pemphigus vulgaris and Stevens-Johnson syndrome. On the other hand, dermatitis-related ulcers included five cases each of irritant contact dermatitis and allergic contact dermatitis, three cases of scrotal dermatitis and one case of seborrheic dermatitis.

The demographic profile of MGU, STU, and non-STU has been summarized in **Table 1**. MGU was more common in middle-aged persons with a mean age of 34.74 years. When subgroups were considered, the mean age of onset was bit higher for STU as compared to non-STU (35.76 and 34.18, respectively). When analyzed for age group less than 18 years, a total of 11 (10% of total study population) patients were found and all of them were having non-STU. Similarly study population was analyzed for age group more than 50 years, a total of 16 patients (14.6%) were found - five (31.2%) were having STU and rest 11 (68.8%) were having non-STU. Therefore, likelihood of STU diminishes at both extremes of age.

Most of the MGU patients (71.8%) were from urban areas. This urban localization of cases was much more pronounced in STU (84.2% in STU and 65.3% in non-STU).

Positive history of sexual exposure (defined in this study as history of sexual act with someone who was not the regular partner) was found in around 53.1% of MGU patients **(Table 2)**. Similar history was found in 97.4% and 22.2% of STU and non-STU, respectively.

Among symptoms, pain and itching were more common in non-STU while dysuria and inguinal swelling were more common in STU **(Table 3)**. Pain was seen in 52.7% and 58.3% in STU and non-STU, respectively. Similarly itching and discharge were seen more commonly non-STU. On the other hand, inguinal swelling and history of similar ulcer in past (recurrence) was more common in STU. Inguinal swelling was seen in 31.6% cases in STU and in 12.5% in non-STU cases. Pain was important presenting feature in genital herpes, miscellaneous group, and malignancy. The other STU that was painful was chancroid. Similarly, pain as a presenting feature was noted in scabies-related ulcer and FDE, too. Dysuria was another symptom that was seen most commonly in genital herpes. History of inguinal swelling was found in all STU and was most prominent in chancroid. However, it was also noted in non-STU. Malignancy had most prominent inguinal swelling among non-STU

The mean duration of ulcer was 10.76 ± 8.56 days for STU and 60.28 ± 158.84 days for non-STU. Range for duration of ulcer was 2-30 days and 1-1095 days for STU and non-STU, respectively. The longest mean duration of ulcer was noted in malignancy with a mean of 394.17 days. Plasma cell balanitis and erosive lichen planus followed a similar longer course with mean days of presentation 97.5 days and 60.0 days, respectively.

The characteristics of ulcers in MGU had been documented in **Table 4**. Mean number of ulcers in MGU was 2.94. The higher mean number of ulcers as compared with non-STU characterized STU, 4.08 and 2.32, respectively. Mean size of ulcers in MGU was 20.37mm. Mean size of ulcers of STU (16.32mm) was less that that of non-STU (22.38mm). This difference was more marked while comparing median values of two ulcers (8.50 mm in STU and 20.00 mm in non-STU). In general, glans penis (31.8%) was most commonly affected site in MGU. Penis (many parts of penis being involved in cases of

Table 1 Demographic profile of patients of male genital ulcer (MGU) and comparison of sexually transmitted ulcer (STU) and non-sexually transmitted ulcers (non-STU).

Data	*MGU (n=110)*	*STU (n=38)*	*Non-STU (n=72)*
Age (years)			
Range	3-62	22-61	3-62
Mean	34.74 ± 13.04	35.76 ± 9.69	34.18 ± 14.53
Median	35.00	35.00	35.00
Religion			
Hindu (%)	92 (83.6%)	32 (84.2%)	60 (83.3%)
Muslim (%)	18 (16.4%)	6 (15.8%)	12 (16.7%)
Education			
Illiterate (%)	25 (22.7%)	9 (23.7%)	16 (22.2%)
Primary (%)	24 (21.8%)	13 (34.2%)	11 (15.3%)
Secondary (%)	25 (22.7%)	7 (18.4%)	18 (25%)
Higher secondary (%)	20 (18.2%)	5 (13.2%)	15 (20.8%)
Graduate (%)	15 (13.6%)	3 (7.9%)	12 (16.7%)
Postgraduate (%)	1 (0.9%)	1 (2.6%)	0
Monthly income (thousands)			
Range	0-23	0-23	0-12
Mean ± SD	3.31 ± 3.11	3.46 ± 3.84	3.24 ± 2.68
Median	2.50	2.50	2.25
Residence			
Urban (%)	79 (71.8%)	32 (84.21%)	47 (65.3%)
Rural (%)	31 (28.2%)	6 (15.79%)	25 (34.7%)
Persons staying away from native place (%)	52 (47.3%)	23 (60.53%)	29 (40.3%)
Mean duration of stay away from native place (years)	8.80 ± 11.24	12.89 ± 12.55	6.63 ± 9.90
Marital status			
Married (%)	64 (58.2%)	18 (47.37%)	46 (63.9%)
Unmarried (%)	26 (23.6%)	7 (18.42%)	19 (26.4%)
Divorced/ wife stays away (%)	20 (18.2%)	13 (34.21%)	7 (9.7%)

Table 2 Sexual history in study population.

	MGU (n=110)	*STU (n=38)*	*Non-STU (n=72)*
H/o exposure - yes	59 (53.1%)	37 (97.4%)	22 (22.2%)
No of partners			
Mean	1.46 ± 1.9	3.03 ± 1.87	0.61 ± 1.28
Median	1	2	0
5 or more	21 (19.1%)	17 (44.7%)	4 (5.5%)
Partner			
CSW	41 (69.5%)	30 (78.9%)	11 (68.7%)
Colleague	27 (45.8%)	10 (26.3%)	7 (43.7%)
Casual	6 (10.2%)	5 (13.2%)	1 (6.2%)
Miscellaneous.	5 (8.5%)	4 (10.5%)	1 (6.2%)
Nature of exposure			
Oral/ anal/ both	14	9	5
MSM	2	1	1
Bestiality	1	0	1
Interval between exposure and ulcer			
Could not be determined	39 (35.1%)	22 (56.4%)	17 (23.6%)
Mean (days)	3.41 ± 10.46	7.26 ± 13.63	1.33 ± 7.56

CSW – commercial sex worker, MGU - male genital ulcer, MSM – men having sex with men, non-STU - non-sexually transmitted ulcers (non-STU) and STU - sexually transmitted ulcer.

Table 3 Clinical profile of study population.

Data	*MGU (n=110)*	*STU (n=38)*	*Non-STU (n=72)*
Duration of ulcer (days)			
Range	1-1095	2-30	1-1095
Mean	42.63 ± 130.45	10.76 ± 8.56	60.28 ± 158.84
Median	10.00	7.00	11.00
Pain (%)	62 (56.4%)	20 (52.7%)	42 (58.3%)
Itching (%)	38 (34.5%)	9 (23.1%)	29 (40.3%)
Discharge (%)	24 (21.8%)	6 (15.8%)	18 (25.0%)
Dysuria (%)	19 (17.3%)	10 (26.3%)	9 (12.5%)
Inguinal swelling (%)	21 (19.1%)	12 (31.6%)	9 (12.5%)
H/O similar ulcer in past (%)	42 (38.2%)	23 (60.5%)	19 (26.4%)
Total number of episodes			
Range	0-12	0-12	0-4
Mean	1.78 ± 2.96	4.10 ± 3.86	0.53 ± 1.02
Median	0.00	4.00	0.00
H/O other ulcer in past (%)	2 (1.8%)	2 (5.3%)	0
H/O ulcer in partner (%)	8 (7.3%)	6 (15.8%)	2 (2.8%)
H/O drug allergy (%)	6 (5.4%)	0	6 (8.3%)

MGU - male genital ulcer, non-STU - non-sexually transmitted ulcers (non-STU) and STU - sexually transmitted ulcer.

Table 4 Comparison of ulcers in three groups.

Data	*MGU (n=110)*	*STU (n=38)*	*Non-STU (n=72)*
Number			
Range	1-10	1-10	1-10
Mean	2.94 ± 2.25	4.08 ± 2.73	2.32 ± 1.65
Median	2.00	4.00	2.00
Size (mm)			
Mean	20.37 ± 16.09	16.32 ± 15.77	22.38 ± 16.05
Median	20.00	8.50	20.00
Site			
Glans penis	35 (31.8%)	4 (10.5%)	31 (43.1%)
Prepuce	22 (20.3%)	12 (31.6%)	10 (13.9%)
Frenulum	1 (0.9%)	0	1 (1.4%)
Shaft	11 (10.0%)	5 (13.2%)	6 (8.3%)
Scrotum	6 (5.4%)	1 (2.6%)	5 (6.9%)
Perianal area	4 (3.6%)	0	4 (5.6%)
Penis	27 (24.5%)	14 (36.8%)	13 (18.1%)
Penis+ scrotum	2 (1.8%)	0	2 (2.8%)
Scrotum+ perianal area	2 (1.8%)	2 (5.3%)	0
Shape			
Irregular	40 (36.4%)	7 (18.4%)	33 (45.8%)
Round	36 (32.7%)	22 (57.9%)	14 (19.4%)
Linear	15 (13.6%)	0	15 (20.8%)
Oval	13 (11.8%)	6 (15.8%)	7 (9.7%)
Annular	1 (0.9%)	0	1 (1.4%)
Other	5 (4.5%)	3 (7.9%)	2 (2.8%)
Margin			
Well defined	84 (76.4%)	38 (100%)	46 (63.9%)
Ill defined	6 (5.4%)	0	6 (8.3%)
Well to Ill defined	20 (18.2%)	0	20 (27.8%)
Floor			
Necrotic	11 (10.0%)	2 (5.3%)	9 (12.5%)
Healthy	80 (72.7%)	31 (81.6%)	47 (65.3%)

Crusted	19 (17.3%)	5 (13.2%)	14 (19.4%)
Base			
Indurated	10 (9.1%)	3 (7.9%)	7 (9.7%)
Non indurated	97 (88.2%)	35 (92.1%)	61 (84.7%)
Hard	3 (2.7%)	0	3 (4.2%)
Tenderness	20 (18.2%)	9 (23.7%)	11 (15.3%)
Discharge			
None	68 (61.8%)	24 (63.2%)	44 (61.1%)
Oozing	23 (20.9%)	8 (21.1%)	15 (20.8%)
Bleeding	8 (7.3%)	3 (7.9%)	5 (6.9%)
Purulent	4 (3.6%)	1 (2.6%)	3 (4.2%)
Bleeding + pus	7 (6.4%)	2 (5.3%)	5 (6.9%)

MGU - male genital ulcer, non-STU - non-sexually transmitted ulcers (non-STU) and STU - sexually transmitted ulcer.

Table 5 Lymph node involvement in the study subjects.

	MGU (n=110)	*STU (n=38)*	*Non-STU (n=72)*
Palpable	22 (20.0%)	13 (34.2%)	9 (12.5%)
Mean number	0.77 ± 1.73	1.33 ± 2.09	0.47 ± 1.42
Mean size (cm)	0.42 ± 0.88	0.67 ± 0.96	0.29 ± 0.81
Consistency			
Firm	15 (68.2%)	11 (84.6%)	4 (44.4%)
Hard	5 (22.7%)	0	5 (55.6%)
Rubbery	2 (9.1%)	2 (15.4%)	0
Tender	9 (40.9%)	6 (46.1%)	3 (33.3%)
Fixed	5 (22.7%)	0	5 (55.6%)
Mobile	17 (77.3%)	13 (100%)	4 (44.4%)
Matted	7 (31.8%)	2 (15.4%)	5 (55.6%)

MGU - male genital ulcer, non-STU - non-sexually transmitted ulcers (non-STU) and STU - sexually transmitted ulcer.

multiple ulcers) [24.6%] and prepuce (20.3%) were the next common affected sites. Penis (36.8%) was most commonly affected site in STU and prepuce (31.6%) was second most common affected site. Glans penis, most commonly affected site in MGU, was affected in 10.5% of cases. However, glans penis was most commonly affected site in non-STU too, followed by penis (18.1%) and prepuce (13.9%) - a pattern similar to MGU. Affection of frenulum (1.4%) and perianal area (5.6%) was exclusively seen in non-STU. In MGU, ulcers were most commonly irregular in shape (36.4%), followed by round (32.7%) and linear (13.6%). Non-STU showed similar pattern. However, linear shaped ulcers were exclusively seen in non-STU. Most of the ulcers in STU were round shaped (57.9%), followed by irregular shaped (18.4%). Another shape of ulcer that was not seen in STU was annular shaped ulcers, which was seen in one case of circinate balanitis, a non-STU. Genital herpes had mostly round lesions while most of other lesions were irregularly shaped. Linear ulcers were most common in scabies-related ulcers and dermatitis-related ulcers, conditions associated with pruritus leading to ulceration. Most of the ulcers in all three categories were having healthy floor (72.7% in MGU, 81.6% in STU and 65.3% in non-STU). Necrotic floor was noticed more frequently in non-STU (12.5%) than in STU (5.3%). Tenderness was seen in minority of cases. In MGU, 18.2% of ulcers were tender. Similar figure for STU and non-STU was 23.4% and 15.3%, respectively. Most of the ulcers (61.8% in MGU, 63.2% in STU, and 61.1% in non-STU) were having no discharge. Among discharging ulcers, most common nature of

discharge was serous (oozing), (20.9% in MGU, 21.1% in STU and 20.8% in non-STU).

Discussion

Relative incidence rate of male genital ulcer patients was found to be 4.88 per 1000. Previous studies have reported a much higher prevalence rate of GUD. One study reported prevalence rate of 12.8% in 1990.[2] However, there has been a declining trend in prevalence of GUD. This has been confirmed in various studies.[8,9]

Our study reports non-STU (65.4%) being more common than STU (34.6%). This is in contrast with widely accepted view of GUD.[1] However, most of the studies have focused on STU only and have reported other ulcers as "nonspecific ulcers" (DM1) or "no diagnosis".[2,10] The studies reporting "no diagnosis" used M-PCR as a diagnostic tool that cannot diagnose non-infective conditions. Some of these studies reported various non-STU conditions like candidiasis, scabies, cancer etc.[2]

Most studies post 1990s had reported predominance of genital herpes, as noted in our study.[1,10] There has been a constant decline in STU of bacterial origin and rise in viral STI.[1,10] Many factors have been responsible for this change. Some of them are widespread antibiotic use, behavioral changes, and syndromic management of GUD.[1,5] MGU was more common in middle-aged persons with a mean age of 34.74 years. Other studies have reported similar findings. Paz-Bailey *et al.*[10] have reported mean age as 29.3 years while Behets *et al*.[2] have reported 30.7 years as mean age. One recent Indian study in 2009 reported 32.38 years as mean age along with 21-30 years as most affected age group.[11] Majority of the patients in all categories were Hindus and they constituted 83.64%, 84.21%, and 83.33% of MGU, STU and non-STU patients, respectively. The low prevalence of GUD in Muslims may be attributed to circumcision, widely practiced among them. Circumcision has been reported to have a protective role in various GUD.[1,5] Recently circumcision has been shown to have a protective role in non-STU too.[12] However, this result needs to be confirmed in population-based studies. Our OPD caters to both Hindu and Muslim population, but their relative attendance is not known. This was one of the limitations of our study.

Around 22.7%, 23.7% and 22.2% of MGU, STU, and non-STU were illiterate. This can be explained by the fact that most of the patients attending our OPD are of lower socioeconomic status that often lack formal education. When no education and primary education were considered together, 44.6% of MGU population was having primary education or less. Similar value in a study by Paiz-Bailey *et al*.[10] has been reported as 28.9%. However, there was no significant difference in two groups - STU and non-STU. It implies that formal education is not a necessity for sex education. The proportion of MGU patients that was unmarried, divorced, or staying alone away from wife was 41.8%. Such patients could be included in risk group for STU. Paz-Bailey *et al*.[10] have reported 87.1% of study population having regular sex partner. Similar figures for STU and non-STU are 52.63% and 36.11%, respectively. High number of "single" male with no regular sex partner in STU group implies that "not having regular sex partner" is a risk factor for STU in sexually active males. The highest number of such patients was found in genital herpes. However, similar high number of such patients was noted in scabies related ulcer, too. This can be explained by inclusion of ulcers seen in scabies in scabies-related ulcer group and many of such patients included were children.

Positive history of sexual exposure was noted in

53.1% of MGU patients. Paz-Bailey *et al*.[10] reported history of sexual exposure in 27.4% cases and among these, history of acquiring new partner was present in 27.6% cases. When details of sex partners were analyzed, it was found that majority of the sex partners were CSW (69.5%, 78.9%, and 68.7% in MGU, STU, and non-STU, respectively). CSW were the major sex partner in both STU and non-STU groups; however, significantly higher in STU groups. Similar findings have been documented in study by Behets *et al*.[2] They too reported CSW as major group among sexual partners. The reason may be their easy availability. The other common sex partners include colleagues or co-workers. Interval between last exposure and appearance of lesion could not be determined in many cases (35.1%, 56.4%, and 23.6% in MGU, STU, and non-STU, respectively). In the group of patients, where it could be determined, the mean day of presentation to us was higher in STU group (7.26 ± 13.63) than in non-STU group (1.33 ± 7.56). Behets *et al*.[2] reported the mean duration between most recent exposure and presentation as 37.4 days.

History of recurrence is a very important in differentiating STU from non-STU. History of recurrence was more commonly seen in STU (60.5% in STU and 26.4% in non-STU). Moreover, number of recurrence was also an important indicator. Mean number of recurrence in STU is 4.10 ± 3.86 while that in non-STU was 0.53 ± 1.02. Hence, it can be concluded that history of frequent recurrences is an important indicator of STU. History of similar ulcer in past (recurrence) was seen in genital herpes, miscellaneous and FDE. Frequency of recurrence was helpful in differentiating these conditions. Genital herpes had more numerous recurrences with a mean of 5.28, highest for any MGU. Therefore, it can be concluded that high number of recurrence is highly suggestive of genital herpes. History of other ulcer in past was seen in secondary syphilis and genital herpes only and may be considered as an indicator of STU. History of ulcer in partner was not that helpful in differentiating STU from non-STU. It was found in secondary syphilis and genital herpes, as well as, in candidiasis. History of drug allergy was exclusively seen in FDE only. Study by Behets *et al*.[2] reported history of past genital ulcer in 50.7% cases. Another study by Behets and Andriamiadana *et al*.[13] has reported involvement of inguinal lymph node in 30% of 190 cases.

Lymph node involvement was seen in around 20.00% patients with MGU **(Table 5)**. It was found more commonly in STU than in non-STU (34.2% and 12.5% in STU and non-STU, respectively). Even mean number of lymph node is more in STU as compared to Non-STU. Consistency of enlarged lymph node can be informative. Hard consistency was exclusively seen in non-STU only whereas rubbery consistency was seen in STU only. Firm consistency of lymph node was seen in both groups; however, it is more commonly seen in STU. Tenderness is another important finding that was seen more commonly in STU (46.1% in STU and 33.3% in non-STU). Fixity to surrounding structure was seen exclusively in non-STU; lymph nodes in STU were mobile in all cases. Matting of lymph nodes was seen in 31.82% and is more common in non-STU (15.38% in STU and 55.56% in non-STU). Behets and Andriamiadana *et al*.[13] reported inguinal lymphadenopathy in 30% of cases. However, more details of lymph node involvement were not mentioned in this study.

Conclusion

We found that non-sexually transmitted ulcers (non-STU) were more common than sexually transmitted ulcers (STU). Genital herpes was most prevalent MGU. Among non-STU,

scabies-related ulcer, Zoon's balanitis (plasma cell balanitis), candidiasis, and FDE were most prevalent. MGU was more common among immigrants and is common among unmarried or divorced or among persons staying away from their wife. History of sexual exposure was seen in all groups - MGU, STU, and non-STU. Hence, history of sexual exposure alone cannot differentiate between STU and non-STU. Majority of sex partners in STU were Commercial sex workers. Therefore, sexual contact with CSW is an important risk factor for STU. Majority of sexual contacts in non-STU too were CSW. Hence, sexual contact with CSW alone cannot differentiate between STU and Non-STU. Mean duration of ulcer was more in non-STU than in STU. Therefore, an ulcer of long duration is less likely to be a STU. Glans penis was the most commonly affected site in MGU.

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