

## Assessment of the drug therapy for sexually transmitted diseases in the White Nile State – Sudan.

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### Abstract

**Back ground:** Irrational drug prescribing is a global problem. It results in development of resistance to antimicrobials, ineffective treatment, adverse effects and economic burden on patient and society.

**Objectives:** This study was carried out to assess the use of drugs for treatment of sexually transmitted diseases (STDs) and to determine their prevalence in the White Nile State-Sudan 2002-2003.

**Material and Methods:** Twenty urban health centers were selected randomly, 30 prescriptions were collected from each health center and assessed against recommended standard therapy.

**Results:** The appropriate drug therapy according to diagnosis was selected in only 10.6% of the collected prescriptions, only 42.2% of them were with appropriate doses and duration of therapy, poly pharmacy was detected in 28.8%, generic prescribing in 35.5% and possible drug- drug interactions in 17.3% of the total collected sample. The prevalence of STDs among total patients was 1.9%. 78.8% of the cases were females, 59.3% were 15-29 years old and Kenana Health Centers showed the highest prevalence of STDs 3.4%. (P<0.05)

**Conclusion:** The results of the present study revealed that prescribing practices for the treatment of STDs were illogical; the reference chart prepared by federal ministry of health Sudan National HIV/AIDS/STD program must be reevaluated, because it is inappropriate and illogical. Continuous training courses are urgently needed locally and nationally to raise the updating levels of medical

**Keywords:** Irrational, prescriptions, antimicrobials.

**I**rrational drug prescribing is a global problem and it exists both in developed and developing countries<sup>1,2</sup>. It results in development of resistance to antimicrobials, ineffective treatment, adverse effects and economic burden on patient and society<sup>3</sup>. The most common irrational prescribing practices were due to incorrect choice of drugs, inappropriate doses, improper duration of therapy and use of unnecessary drugs<sup>4,5</sup>. Most studies conducted in south Asia countries conclude that the quality of prescribing is poor particularly in private sector<sup>6</sup>.

There are more than 20 other sexually transmitted diseases (STDs) but the most widely known are gonorrhoea, syphilis, and AIDS. They are under reported in most countries and they affect the age group 15-29 years more than any other age group and their prevalence among males over 19 years is more than that among females<sup>7</sup>. In South Africa the recommended drug therapy was given to only 41% of STD cases<sup>8</sup>, and the effective treatment reported by general practitioners for urethral discharge, genital ulcer, and pelvic inflammatory disease (PID) were 28%, 14% and 4% respectively<sup>9</sup>. Bacterial vaginosis is neglected by both clinician and laboratory personnel in Elhaj Yousif areas, although it is the most prevalent STD<sup>10</sup>.

Irrational prescribing is one of the major worrying issues in Spain<sup>11</sup> and in Singapore there was no local data on the prescribing habits over the last 25 years<sup>12</sup>.

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In Pakistan the extent and nature of irrational prescribing of drugs has not been explored, inappropriate doses, no specified duration of therapy were detected<sup>13</sup>. In Ghana prescribing patterns were worse in health centers than in district hospital<sup>14</sup>.

Irrational use of drugs is a global and a national problem, it was observed that many prescriptions for treatment of STDs were inappropriate, also there is an absence of up - to - date standard treatment guidelines. STDs need an immediate effective treatment to prevent their serious complications, thus the investigation of the current drug therapy of STDs is highly needed as a research tool to the magnitude of the inappropriate practices for the treatment of STDs.

This study aimed to assess the current prescribing practice in the White Nile State – Sudan, to establish a recommended standard therapy for sexually transmitted diseases, to determine the prevalence of sexually transmitted diseases among the total number of patients attending the health centers.

## Material and Methods

**Study design:** A descriptive health facility based study design.

**Study Area:** This study was carried out in Kosti, Rabak, Kenana and Assalaya cities in the White Nile State – Sudan ( September 2002 – March 2003).

**Sample size:** Twenty urban health centers out of a total of 23 at these cities were selected by simple random probability method, 30 prescriptions written for STDs were collected prospectively from each center.

The prescribers (Medical officers and Medical assistants) were requested duplicate their prescriptions and to write the diagnosis and the age of the patient at the back of each prescription.

A total of 600 prescriptions were collected during 6 months. The total number of patients attending each health center during that period was registered to determine the epidemiology of the STDs.

A recommended standard therapy was established and approved by clinical pharmacologists, venereologists and gynecologists depending on syndromic case management<sup>7, 16-18</sup>.

The current prescribing practices were assessed by comparing against the recommended standard therapy. Each prescription was assessed according to the following: appropriate drug therapy according to diagnoses, appropriate dosage and duration of therapy, polypharmacy, generic prescribing, and possibility of drug – drug interactions.

**Data analysis:** The data were entered in a master sheet, then into SPSS for the performance of the descriptive and comparative analysis. The data comparison was carried out by paired student t-test. The level of significant difference was  $p < 0.05$ .

## Results

Assessment of the drug therapy for STDs:

It has been found that the selection of a suitable drug therapy according to diagnoses was only in seven of the prescriptions.

The appropriate doses and duration of therapy was found in 4.5% of them, poly pharmacy was detected in 32.5%, generic prescribing in 28.8% and possibility of drug-drug interactions in 17.3% of the total collected prescriptions (Table 1)

Table (1) Drug therapy assessment

Drug uses parameter	%
Appropriate drug Therapy	10.6 %
Appropriate dose and duration of Therapy	42.2 %
Polypharmacy	28.8 %
Generic prescribing	32.5 %
Drug – Drug Interaction	17.3%

The prevalence of STDs was 1.9%, 78.8% of them were females. STDs were significantly more prevalent in females ( $p < 0.05$ ).

A highly significant incidence [59.3% ( $p < 0.05$ )] of STDs was found in patients with the age range 15-29 years, while the incidence in other age groups was illustrated in table (2).

Table (2): STDs among different age groups

Age Group (Year)	%
15----29 Years	59.3%
> 30 Years	40.2%
< 1 Year	0.3%
1---- 14 Years	0.2%

A highly significant differences between the prevalence of STD syndromes was detected ( $p<0.05$ ). Vaginal discharge was the most prevalent syndrome (62%) Table (3).

Table (3) STD syndromes

Syndrome	%
-Vaginal discharge	62%
-Urethral discharge	19%
-Pelvic inflammatory disease	15%
-Genital ulcer	3.1%
-Neonatal conjunctivitis	0.2%
-Congenital syphilis	0.3%

The geographical distribution of STDs was as follows: Kenana Health Centers 3.4%, Kosti Health Center 2.2%, Rabak 1.5%, Assalaya health center 10% Table (4).

Table (4): The Geographical distribution of STDs

Area	%
Kenana	34%
Kosti	22%
Rabak	15%
Assalaya	10%
Other	19%

The results of this study identified the following problems: poor ability to select an appropriate drug therapy, in appropriate dosage and duration of therapy, low generic prescribing and high possibility of drug-drug interactions.

### Discussion

The results of the assessment of prescribing practices has determined the inappropriate drug prescribing, improper dosage and duration of therapy and use of excess unneeded drugs which is similar to

studies done in South Africa, Ghana and Pakistan<sup>8,9,11,13</sup>.

The irrational prescribing practices included the absence of an antitrichomonal or antifungal drugs in the cases which were diagnosed as vaginal trichomoniasis or candidiasis, the excessive prescribing of Benzathine penicillin for treatment of vaginal, urethral discharge or pelvic inflammatory disease which has not been recommended by others<sup>15</sup>. Also excessive prescribing of gentamycin for uncomplicated cases was noticed. Rifampicin and streptomycin were prescribed for the treatment of gonorrhea.

Low generic prescribing was found to be due to the frequent visits of the medical representatives promoting the brand names for the prescribers. These irrational prescribing confirms the lack of knowledge shown by prescribers, particularly medical assistants. Also the results of this study revealed that the present reference chart prepared by the federal Ministry of Health Sudan National STD/AIDS program is inappropriate because it considered kanamycin as a first and unique treatment for gonorrhea, despite the fact that the use of kanamycin has declined in many centers<sup>16-18</sup>, also it neglected the appropriate drug therapy of viral and fungal infections. Besides it allowed no options to avoid contraindicated drugs.

This study was conducted to determine the prevalence of STDs in the White Nile State and to assess the prescribing patterns for their treatment. It was found that the age group 15-29 years is significantly the most affected group by STDs, which is similar to the facts stated elsewhere<sup>7</sup> while the results of this study showed that the prevalence of STDs among females is significantly higher than that in males which is completely different literature<sup>7</sup>. The results revealed that vaginal discharge was the most prevalent syndrome which is similar to others<sup>10</sup>. Kenana health centers showed the highest percentage of STDs prevalence this may be due to the fact that it is an attractive area for workers from many parts of the country and even from neighboring countries.

## Conclusion

The results of the present study revealed that prescribing practices for the treatment of STDs were illogical; this will lead to a reduction in the quality of drug therapy, increased morbidity and mortality, waste resources, increased risk of adverse drug reactions and emergence of drug resistance.

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