



EFFECTIVENESS OF SYNDROMIC MANAGEMENT APPROACH FOR THE DIAGNOSIS AND TREATMENT OF PELVIC INFLAMMATORY DISEASE

Obstetrics & Gynecology

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ABSTRACT

Introduction: Pelvic inflammatory disease (PID) comprises a spectrum of inflammatory disorders of the upper female genital tract, including any combination of endometritis, salpingitis, Tubo ovarian abscess, and pelvic peritonitis.

Many cases of PID are asymptomatic or present with minimal atypical symptoms, other symptoms patients may experience include pelvic pain and tenderness, lower abdominal pain and tenderness, pain with sexual intercourse, irregular menstrual bleeding, or purulent vaginal discharge. Patients may also experience nonspecific symptoms such as lower back pain, nausea, and vomiting.

About 60% - 75% of PIDs are caused by STD. In 1991 the world health organization developed flowcharts as guides for STD management in low-income countries. Women with the pelvic inflammatory disease most commonly present with lower abdominal pain. Syndromic case management algorithms for Lower abdominal pain are used for identification, treatment, and follow-up of PID patients. The treatment has been standardized through the use of pre-packaged color-coded STI / RTI drug kits. For the treatment of PID yellow color kit is available at all health centers.

Objective:- to know the effectiveness of Syndromic Management approach for the diagnosis and treatment of Pelvic Inflammatory Disease.

Material and method:- A retrospective analysis of medical records of patients with a complaint of lower abdominal pain was included in the study group from DH outdoor clinic. Pelvic inflammatory disease diagnosis was made according to symptoms and clinical examination. Medical records of 160 patients from 1st April 2016 to 31st December 2016 were studied.

Results:- In the study out of 160 cases, most of The patients were belong to 26-30 years of age, most of them were married (84%), a maximum number of patients were rural (84%), most of them were multipara (53.13%). Most of the patients were educated below SSC (55%).

In the study, most of the patients were not using any method of contraceptive (38.75%). The most common contraceptive practices were Barrier in 25% of patients and had a history of use of IUD in 18.12%. In the study, the most common presenting complaints were pain in the abdomen in 100% cases, followed by per vaginal discharge of 63%, Pain in the lower back at 43%, Fever of 30%, and abnormal uterine bleeding 28%.

In the study, fornical tenderness was present in 79%, cervical motion tenderness in 77%, abnormal discharge in 63% and fix and retroverted uterus in 56%, and adnexal mass was present in 10.62% cases.

In the study the outcome of treatment after syndromic management in terms of symptomatic relief was in 87.5 % of cases while 2.7% discontinued treatment, 6.87%, did not comply with the medication, 2.27% patient not turned up for follow up and 2.04% patients need Hospitalization in DHS and further treatment.

Conclusion: We found that syndromic approach achieves high cure rates, diagnosis and treatment of the patient can be done in one visit, highly effective, relatively inexpensive, all possible STIs are treated at once, it is scientifically tested in many parts of the world, easy for health works to learn and practice for patients, integrated into primary health care services more easily, and Can be used by providers at all levels. Syndromic management prevents long term sequelae of untreated pelvic inflammatory disease.

KEYWORDS

Pelvic inflammatory disease, Syndromic Management, Pain in the abdomen.

INTRODUCTION:

Pelvic inflammatory disease (PID) comprises a spectrum of inflammatory disorders of the upper female genital tract, including any combination of endometritis, salpingitis, Tubo-ovarian abscess, and pelvic peritonitis.¹

The CDC has estimated that more than 1 million women experience an episode of PID every year. Studies have reported prevalence ranging from 5.2% to 17.2% PID in various parts of India.²

Many cases of PID are asymptomatic or present with minimal atypical symptoms.³ Other symptoms patients may experience include pelvic pain and tenderness, lower abdominal pain and tenderness, pain with sexual intercourse, irregular menstrual bleeding, or purulent vaginal discharge.^{4,5,6} patients may also experience nonspecific symptoms such as lower back pain, nausea, and vomiting.⁷

Several Clinical symptoms like lower abdominal pain, cervical motion tenderness, and bilateral adnexal tenderness are considered to be the minimal criteria for PID.⁴

Risk Factors for PID include younger age multiple sexual partners, failure to use contraception, history of prior STIs of PID, history of sexual abuse⁸ or an intrauterine contraceptive device. Gynecologic Surgical procedures that affect the cervix such as endometrial biopsy, curettage (after the termination of pregnancy), and hysteroscopy break the cervical barrier, predisposing women to ascending infections.^{9,10}

As the etiology of PID is complex and polymicrobial, broad-spectrum antimicrobial coverage is recommended. The CDC proves definite recommendations for outpatient and inpatient treatment of PID. The decision regarding inpatient or outpatient therapy should be based on clinical criteria. All women should be followed up at 48 – 72 hours of initiation of therapy to assess response. If necessary, patients who do

not respond to therapy within 72 hours should be hospitalized for parenteral therapy.⁴

Community-based surveys have shown that about 60% of the adult Indian population suffers from sexually transmitted infections and reproductive tract infections. About 60% - 75% of PIDs are caused by the STD of which gonococcus; Chlamydia and mycoplasma is the main organism. The most effective measure for the prevention of PID is the prevention of STDs.¹¹

STD case detection and management are not seen to be feasible and affordable in low-income countries. There is often an absence of laboratory support and non-availability of medical facilities are often not unavailable, and people often have to travel long distances to access a physician and laboratory facilities and sometimes, laboratory tests take time and may delay the treatment. To avoid sequelae such as blocked tubes, chronic pelvic pain, and infertility or ectopic pregnancy, modern management is to initiate antibiotics while waiting for the final reports. In the absence of an etiological test for the diagnosis of an individual organism, in 1991 the world health organization developed flowcharts as guides for STD management in low-income countries. The syndromic approach (advocated by WHO) has been developed as an effective and appropriate case management strategy^{12, 13}. Syndromic case management (SCM) is the cornerstone of STI / RTI management, this approach classifies STI / RTI into syndromes, which, are an easily identifiable group of symptoms and signs rather than the laboratory test and provides treatment for the most common organisms causing the syndrome.

Essential Steps of STI/RTI Syndromic Case Management¹⁴

The essential steps of STI/RTI syndromic case management include:

1. History taking
2. Clinical examination: genital/oral and anorectal apart from general examination

3. Appropriate syndromic diagnosis as per syndromic flow charts
4. Minimal laboratory tests, wherever available.
5. Early and effective treatment, preferably a single dose and directly observed.
6. Promotion and provision of condoms.
7. Counseling for behavior change and risk reduction
8. Referral for syphilis screening and HIV counseling and testing
9. Partner/s notification and management
10. Follow-up as per schedule.
11. Documentation of case details and laboratory results.

The treatment has been standardized through the use of pre-packaged color-coded STI/ RTI drug kits.

For the treatment of PID yellow color kit(containing Cefixime 400mg oral stat, Doxycycline 100 mg BD for 14 days, and Metronidazole 400mg BD oral for 14 days) is available at all health centers.

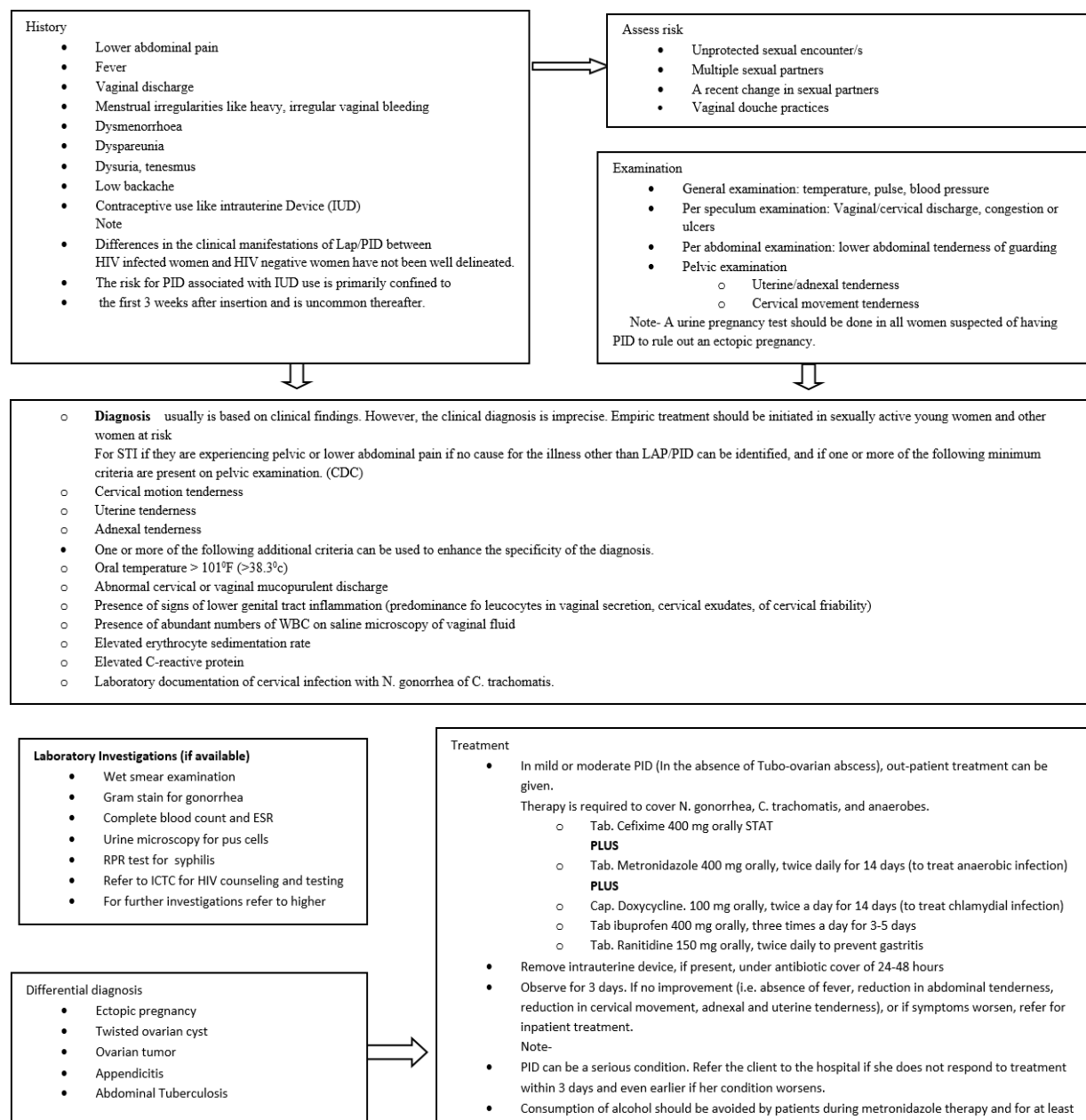
There are many advantages of syndromic Management STD management by syndromic approach achieves high cure rates.¹⁵ diagnosis and treatment of the patient can be done in one visit, Relatively inexpensive, Highly effective, all possible STIs are treated at once. It is scientifically tested in many parts of the world, easy for

health works to learn and practice for patients, integrated into primary health care services more easily, and Can be used by providers at all levels. While syndromic management may lead to overtreatment of patients with single infections, the cost per patient cured (considering all direct costs) maybe two to three times less than clinical diagnosis and three to four times less than aetiological diagnosis¹⁶

There are various limitations of Syndromic Management as it is not useful in asymptomatic individuals, a small risk of unnecessary treatment or overtreatment, and increases the potential for antibiotic resistance especially if the full course is not completed. Other problems with syndromic case management relate to its implementation, Funds are often not available in resource-poor countries for initial and refresher training of doctors and primary health care workers, often, training in syndromic management excludes clinicians in the private sector, pharmacists, and other health care providers.¹⁷

Patient Cooperation, antibiotic susceptibility, and drug availability are additional important considerations. The algorithms need to be appropriate to the level of training of the clinical staff, and regular evaluation and monitoring of the management protocols are required.¹²

Flow chart 1: Approach to management of Lower Abdominal pain syndrome in our setup.^{14, 4, 5}



MATERIAL AND METHODS:

A retrospective analysis of medical records of patients with a complaint of lower abdominal pain was included in the study group from the DH outdoor clinic. Pelvic inflammatory disease diagnosis was made according to symptoms and clinical examination. Medical records of 160 patients from 1st April 2016 to 31st December 2016 were studied.

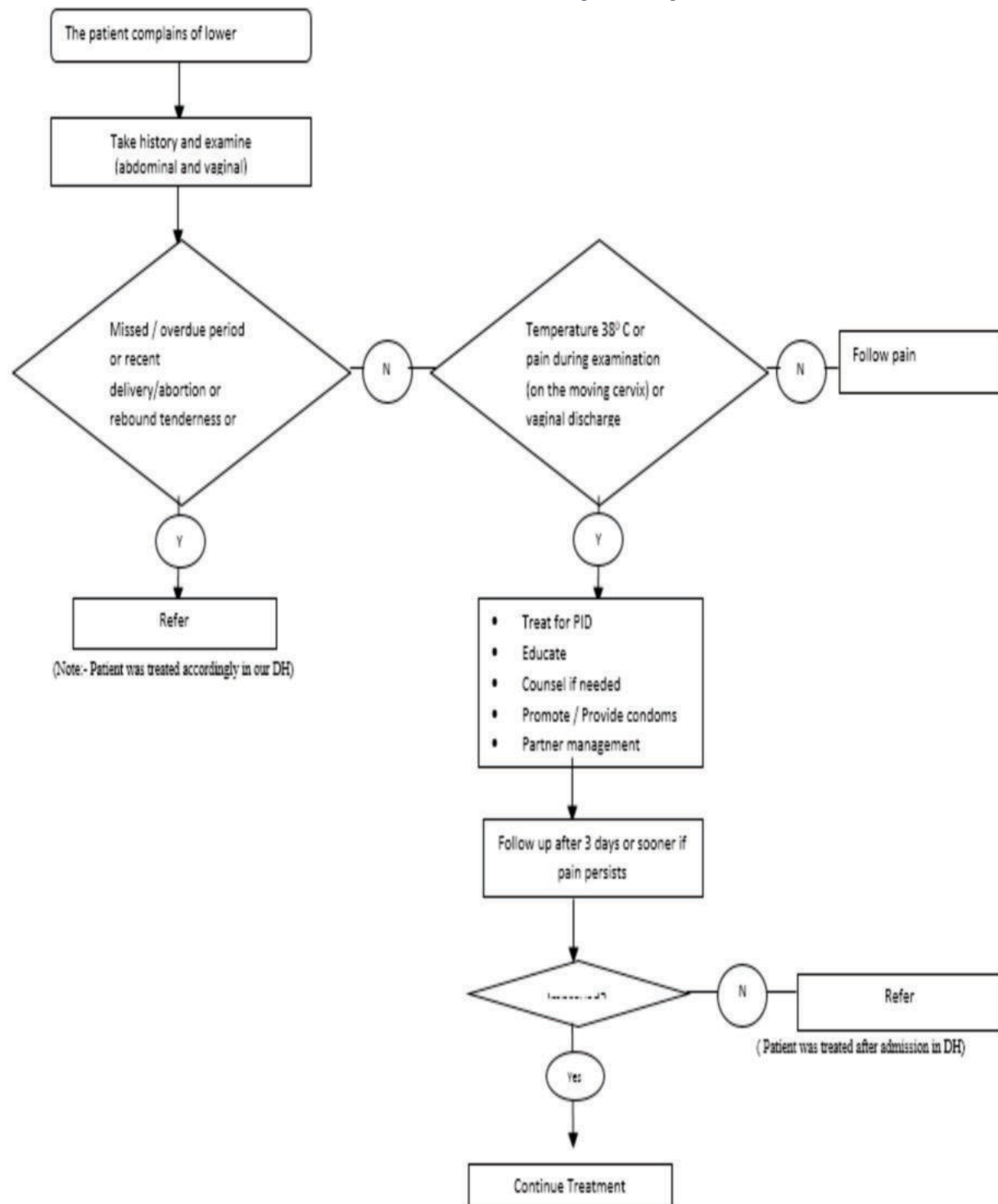
Information was collected like age parity, age at marriage socio-economic status, residence, education, use of any contraceptive, any related risk factors, symptoms, and clinical examination findings like pain in the lower abdomen, abnormal vaginal discharge, Backache, Irregular menstrual periods, pain during intercourse, Infertility, Fever,

lassitude and headache, Nausea and vomiting and Dyspareunia was noted.

Patients education, counseling, diagnosis, and treatment were done in a single visit according to WHO criteria. Any laboratory tests were studied. In the study, all patients were treated by (Kit 6, which is yellow color coded STI / RTI drug kits. For the treatment of PID containing Cefixime 400mg oral stat, Doxycycline 100 mg BD for 14 days, and Metronidazole 400mg BD oral for 14 days) were studied. A total of 166 cases were included in the study.

In our study, the WHO flow chart for lower abdominal pain was followed for diagnosis and treatment purposes.

Flow Chart: 2 WHO flow chart for lower abdominal pain for diagnosis and treatment.



Flow chart 2: World Health Organization 1991. Management of Patients with sexually transmitted diseases: Report of a WHO Study Group WHO Technical Report Series, No. 80. Geneva, Switzerland: World Health Organization. [Pub med]

The decision of hospitalization is based on the clinical scenario and whether the patient meets any of the following suggested criteria:

CDC – 2015 Criteria for hospitalization¹

- Surgical emergencies, (e.g. appendicitis) cannot be excluded
- The patient is pregnant
- Unresponsive to outpatient therapy for 48 hours
- Unable to follow or tolerate an outpatient oral regime
- Severe illness, vomiting, temperature > 38° C
- Suspected Tubo ovarian abscess

STATISTICAL ANALYSIS:

All the data were analyzed using IBM SPSS Ver. 20 software. Cross tabulation and frequency distribution were used to prepare the table. Data are expressed as numbers and percentages.

RESULTS: In the study, 160 patients with a complaint of lower abdominal pain were included and studied.

1. Socio-demographic pattern.

Table 1. Socio-demographic pattern.

Age group	Number of patients	Number of patients (%)
18-25 years	35	21.88%
26 – 30 years	78	48.75%
31 – 35 years	24	15%
36-40 years	16	10%
>40	7	4.37%
Total	160	100%
Residence		
Rural	134	84%
Urban	26	16%
Total		
Educational status	Number of patients	Number of patients (%)
Illiterate	8	5%
Up to Primary	42	26.25%
Up to HSC	88	55%
Graduate	17	10.5%
Post Graduate	5	3.25%
Total	160	100%
Socioeconomic status	Number of patients	Number of patients (%)
Upper	27	16.87%
Middle	82	51.25%
Lower	51	31.87%
Total	160	100
Married/unmarried		
Married	134	84%
unmarried	26	16%
Total	160	100
Parity	Number of patients	Number of patients (%)
Nullipara	38	23.75%
Primipara	37	23.12%
Multipara	85	53.13%
Total	160	100%

In our study out of 160 cases, most of The patients were belong to 26-30 years of age, most of them were married(84%), a maximum number of patients were rural (84%), most of them were multipara (53.13%). Most of the patients were educated below SSC (55%).

2. : Method of Contraception

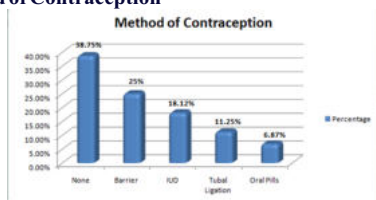


Fig: 1 Various method of Contraception

Fig 1 shows in our study most of the patients were not using any method of contraceptive (38.75%). The most common contraceptive practices were Barrier in 25% of patients and had a history of use of IUD in 18.12%,

3. Presenting Complaints.

most of the patients presented with multiple symptoms related to pelvic inflammatory disease.

Table: 2 Presenting complaints

Complaint	Number of patients	Percentage
Pain in the abdomen especially in the pelvic area	160	100%
Unusual PV discharge (Heavy, unpleasant smelling vaginal discharge which becomes purulent and or copious)	101	63%
Bleeding or spotting between periods	45	28%
Abnormal Uterine Bleeding	Irregular and excessive vaginal bleeding	
Pain in the lower back	69	43%
congestive dysmenorrhoea		
Pain during sexual intercourse		
Fever	48	30%
Nausea & Vomiting	30	19%
Unable to conceive	18	11%
Others: fatigue and headache, Frequent urination		

Table 2: In our study, the most common presenting complaint was a pain in the abdomen 100%. Followed by per vaginal discharge 63%, Pain in the lower back 43%, Fever 30%, and abnormal uterine bleeding 28%.

4. Pelvic examination findings.

On per vaginal examination, multiple signs were present In most of the patients.

Table:3 Pelvic Examination findings

PV findings	Number of patients	Percentage
Abnormal PV discharge (may be foul smelling)	101	63%
Fix and retroverted uterus with or without thickened appendages	90	56%
Cervical motion tenderness	123	77%
Fornical tenderness	126	79%
Adnexal mass	17	10.62%

Table 3 shows that In our study fornical tenderness was presenting 79%, cervical motion tenderness in 77%, abnormal discharge in 63% and fix and retroverted uterus in 56%, and adnexal mass was present in 10.62%.

5. The outcome of treatment.

Table 4: The outcome of treatment.

Outcome of treatment	Number of patients	Percentage
Successful Outpatient treatment	140	87.5%
Discontinued Treatment (because of nontolerance)	11	6.87%
Did not comply with the medication	2	1.36%
The patient was not turned up for follow up	4	2.72%
Hospitalization in DHS and further treatment	3	2.04%
Total	160	100%

Table 4: In the study the outcome of treatment after syndromic management in terms of symptomatic relief was in 87.5 % of cases while 2.7% discontinued treatment, 6.87%, did not comply with the medication, 2.27% patient not turned up for follow up and 2.04% patients need Hospitalization in DHS and further treatment.

DISCUSSION:

In our study out of 160 cases, most of The patients were belong to 26-30 years of age, most of them were married(84%), a maximum number of patients were rural (84%), most of them were multipara (53.13%). Most of the patients were educated below SSC (55%). Our study was comparable with various studies in which the most common age was 26-30 years most of the patients were married, of the lower middle class, and multiparous.^{18,19,20} Our study was not comparable with the study of **Newabong et al**²¹ in which the Maximum incidence of PID was in educated women below SSC (54.3%) and found a Lower incidence of PID in married women 41%.

In our study, most of the patients were not using any method of contraceptive (38.75%). The most common contraceptive practices were Barrier in 25% of patients and had a history of use of IUD in 18.12%, this study was comparable with various studies where, IUD users were 20.5%, 27.3%, 22%, and 26% in various studies respectively.^{18,19,20,22}

In our study, the most common presenting complaint was a pain in the abdomen 100%. Followed by per vaginal discharge 63%, Pain in the lower back 43%, Fever 30%, and abnormal uterine bleeding 28%. In a study of **Shinde et al** pain in the abdomen was 93.5% per vaginal discharge 66.5%, fever 51% in the study of **Elie Nkwabong**. Pain in the abdomen in 75.7% per vaginal discharge 73.27% and fever 70.85%. In one another study of the most frequent presenting complaint was lower abdominal pain (68%) followed by low backache (58%) and vaginal discharge (52%). Low grade fever 48%, malaise (38%), dyspareunia (22%) and infertility (12%)²². In the study of **Blake DR**²⁴, **Burnakis TG, et al**,²⁵ also showed lower abdominal pain was also the most common symptom in PID patients. Our study was not comparable with the Study of **Francisco et al**²⁵ in which, the most common clinical Findings were vaginal discharge (47%) and pelvic pain (39%). In the physical examination, leucorrhea was the most common finding (47%), followed by lower abdominal tenderness (35%) and cervical motion tenderness in (27%) cases.

In our study fornical tenderness was present in 79%, cervical motion tenderness in 77%, abnormal discharge in 63% and fix and retroverted uterus in 56%, and adnexal mass was present in 10.62%. In the study of Shinde et al fornical 89%, cervical motion tenderness 84%, on per vaginal discharge 71%, adnexal mass 19.5% cases on per vaginal examination. In a study by Ahmed²⁶ et al fornical tenderness 100%, cervical tenderness 100%, and per vaginal discharge 16%.

In the study the outcome of treatment after syndromic management in terms of symptomatic relief was in 87.5 % of cases while 2.7% discontinued treatment, 6.87%, did not comply with the medication, 2.27% patient not turned up for follow up and 2.04% patients need Hospitalization in DHS and further treatment. which was comparable with another study in which after one-month follow-up, syndromic management effectiveness in terms of symptomatic relief on 72.7% while 9.1% discontinued treatment and 4.5% did not comply with the medications.²⁷. In the study of **Salma Gillani**,²⁸ 97 patients returned for follow-up after completing the treatment. Of these, 94 patients Showed both subjective and objective improvement of examination. Similar results of 92-96% were also shown by Sharma and Malhotra while comparing the efficacy.

CONCLUSION:

PID Should be the part of differential diagnosis in all women aged 15-44 years with nonspecific abdominal pain, focus of practices should be to recognize, this disease in adolescent and young adults to prevent long term reproductive sequelae Syndromic management is a scientific approach and this approach does not deny the use of lab tests, it can supplement the approach (Enhanced syndromic approach). We found that syndromic approach achieves high cure rates, diagnosis and treatment of the patient can be done in one visit, highly effective, relatively inexpensive, all possible STIs are treated at once, it is scientifically tested in many parts of the world, easy for health works to learn and practice for patients, integrated into primary health care services more easily, and can be used by providers at all levels.

Syndromic management prevents long term sequelae of untreated pelvic inflammatory disease. This approach ensures correct and complete treatment of all the most common organisms responsible for a particular syndrome. syndromic management goes beyond pharmaceutical treatment include client education and counseling. The clinical skills of a doctor are well utilized in the syndromic approach.

the WHO syndromic management algorithm is useful in symptomatic patients but there is also a need to screen asymptomatic STI patients to prevent PID and its long-term sequelae through early treatment. Training of nurses, health workers, dais, Anganwadi workers regarding RTI identification and referral using syndromic approach and promotion of menstrual hygiene, genital hygiene, and healthcare-seeking behavior would help in reducing the burden of RTI in the community.

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