

Contemporary profile of the patient with acute pelvic inflammatory disease

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Abstract

Background: The aim of our research included identifying the medical and social determinants that favor the development of acute pelvic inflammatory disease (APID), and assessing the contemporary profile of the APID patient while improving the process of diagnostics and management for this disease.

Material and methods: There were analyzed 644 clinical cases of patients that were selected according to the CDC criteria regarding APID, who were hospitalized in the Department of Septic Gynecology at the Municipal Clinical Hospital No 1 of Chisinau city.

Results: Some medical and social determinants had either a direct or an indirect role in the development of acute pelvic inflammatory disease. In the current study, 40.38% of cases were young women, 59.01% were unmarried, 58.35% of cases – do not use contraceptive measures and 79.18% of patients were from a poor socio-economic background at the time of the study. APID patients had a higher incidence of bacterial vaginosis – 34.93% cases. 52.01% of patients are carriers of chronic diseases and coexistent pathologies are prevailing in one third of the patients included in the study. Approximately 71.89% of patients in the study were hospitalized with a delay of 5 days after the onset of the disease.

Conclusions: We have compiled the contemporary profile for the APID patient – young women, coming from a poor socio-economic background, who do not have health insurance, who are more likely to have a low income, a lower education level, and an earlier start of the sexual life, they tend to have multiple sexual partners as well.

Key words: acute pelvic inflammatory disease, patient profile, medical and social determinants.

Introduction

Acute pelvic inflammatory disease (APID) is the inflammation of the organs of the upper female genital tract. APID is the most common gynecologic pathology observed in females of reproductive age, more than half of them having at least one type of genital infection throughout their life [1]. The number of patients with PID is underestimated because some are not diagnosed due to an asymptomatic evolution, other patients are not hospitalized or may be misdiagnosed and treated at the outpatient care level; these cases are not reported by doctors [6]. According to the scientific literature, the determinants involved in the development of APID can be grouped into: behavioral, social, biological, endogenous, exogenous etc. [8]. A thorough study upon the matter can be justified because inflammatory processes in females with gynecologic pathology tend to become chronic and generalized, with the development of pathophysiological changes and pathomorphologic changes in the affected tissues, with the involvement of the nervous system, endocrine, reproductive, etc in the pathological process [7]. Urogenital infections serve as a starting point for the development of various gynecological and obstetrical diseases [10]. It is considered that after a flare of PID, in 18% of cases, the patients will eventually have an ectopic pregnancy, and 15% of them will suffer from sterility. It seems that the risk of infertility after a single episode of PID is significantly lower for young females (15-24 years) than for women that are older [5]. Women with APID have an increased risk of tubal factor infertility and ectopic pregnancy [3]. The proportion of infertility increases by 15% after one episode of infection; by 30% after two episodes and by 50% after three or more episodes. Women who have had an episode of BIPA

have a 10-fold higher risk of developing tubal factor infertility [9]. The painful pelvic syndrome or the chronic pelvic pain occurs as well in approximately 24-75% of women with PID. The risk of this late-type (delayed) sequelae is 10 times higher in comparison to women who have not suffered from PID[4]. Our study has been focused on analyzing the contemporary profile of the patients who suffer from APID, and identifying the determinants involved in the onset of the disease.

Material and methods

There were analyzed 644 clinical cases of patients that have followed the CDC criteria [2] regarding APID, who were hospitalized at the Department of Gynecology of the Municipal Clinical Hospital No 1 of Chisinau. The aim of the study was to research the contemporary profile of the patient with APID and to identify the medical and social determinants that favor the occurrence of this disease. As criteria for selecting the patients, we have used the CDC standards from USA, where for a diagnosis of APID are being used the following criteria: major criteria - lower abdominal pain, vaginal sensitivity in both annexes of the vaginal tract, pain at the cervix mobilization; Special criteria are ultrasound findings, purulent fluid extraction at culdocentesis, endometriosis identified by endometrial biopsy or laparoscopy; Minor criteria – vaginal discharge, elevated ESR, fever > 38.3°C, leukocytosis, positive laboratory tests for *Chlamydia* or gonorrhea[2].

Results

In order to be able to highlight some correlations between the age of the patients and the occurrence of APID, the patients were divided according to an age criteria. Re-

garding the distribution of the age groups (with an interval of 10 years), we can conclude that the gathered data showed that patients under 25 are the ones that are the most commonly affected by APID, the number of cases being 260 (40.38±1.93%). In the 26-35 years age group, there can be observed a high proportion of patients as well – 184 cases (28.58±1.78%), APID frequency decreases in the 36-45 years age group, comprising 124 cases (19.26±1.56%), and the lowest frequency of APID has been observed in the group of patients after the age of 46 – 76 cases (11.81±1.27%).

The age of starting sexual activity for the patients from the study was as following: up to the age of 16 – 339 patients (52.64±1.97%); 17-18 years – 133 patients (20.65±1.59%); 19 to 20 years – 95 patients (14.76±1.39%); after the age of 21 – 77 patients (11.96±1.28%) ($\chi^2 = 10.8$, $gl = 3$, $p < 0.05$).

As it was demonstrated in our analysis, the highest number of patients had the start of their sexual life before the age of 16 (52.64±1.97%). The number of sexual partners for patients with APID was: 1 sexual partner – 168 cases (26.09±1.73%), two sexual partners – 255 cases (39.60±1.93%), three sexual partners – 91 cases (14.13±1.37%), 4 sexual partners – 53 (8.23±1.08%), 5 partners – 20 cases (3.11±0.68%), no answer to the question – 57 cases (8.85±1.12%) ($\chi^2 = 15.7$, $gl = 5$, $p < 0.01$). We have observed that 65.07% of the patients included in the study, had two or more sexual partners. The types of contraception used by patients are: the male condom – 85 cases (13.19±1.33%), *coitus interruptus* – 171 cases (26.55±1.74%), IUDs – 129 cases (20.03±1.58%), spermicides – 15 cases (2.33±0.59%), COC – 39 cases (6.05±0.94%), no contraception – 205 cases (31.83±1.84%) ($\chi^2 = 18.2$, $gl = 5$, $p < 0.01$).

We have observed that APID has a higher incidence rate in unmarried females (59.01%). A permanent residence has been declared by 357 patients (55.43±1.96%), and a temporary place of residence – 287 patients (44.56±1.96%) ($t = 3.8988$, $p < 0.001$). The studied group, based on their level of education and their job, consists mostly of females who completed the general secondary education – 468 patients (72.67±1.76%), which may account for the degree of self-awareness regarding the possible complications that

may arise after a flare of APID. The study has included 95 students (14.75±1.39%), 89 females engaged in an intellectual type of work (13.82±1.36%), 157 of the females were workers (24.37±1.69%), 53 (8.23±1.08%) of them perform housework, 72 (11.18±1.24%) are unemployed, 5 invalids (0.77±0.35%) and 173 females (26.86±1.75%) were engaged in seasonal jobs abroad ($\chi^2 = 16.2$, $gl = 6$, $p < 0.05$). Unfavorable workplace conditions and occupational hazards may favor the development of APID. 170 of the studied females are working under varying temperatures (26.39±1.74%); 58 of the women are engaged in physical labour (9.01±1.13%); in 26 cases, the work involves contact with toxic substances (4.03±0.77%).

It is known that women from poor socio-economic backgrounds, are more often affected by inflammatory diseases related to unfavorable workplace conditions, occupational hazards, lack of permanent housing, low wages and chronic malnutrition [9]. In order to highlight the socially vulnerable group, we have conducted an analysis of the monthly income for each patient. In this study, a monthly salary of up to 1,000 lei (MDL) has been reported by 230 patients (35.71±1.89%), a salary of 1000-1900 MDL by 37 women (5.74±0.91%); 2000-2900 MDL – 70 women (10.87 ± 1.23%), a salary of 3000-3900 MDL – 19 women (2.95±0.67%), more than 4,000 MDL – 45 women (6.98±1.00%); the average salary being 1094.25±254.63 MDL. From the studied group, 141 women (21.89±1.63%) depend on their partners or other family members; unstable incomes have been reported by 102 women (15.84±1.44%) ($\chi^2 = 15.7$, $gl = 5$, $p < 0.01$).

In summary, we have observed that 79.18% of the total number of women are from poor socio-economic backgrounds, of whom – 52.72% have low incomes, and 21.89% – lack any source of income. 209 of the women included in the study, did not have medical insurance (32.45±1.85%).

The analysis of the medical history, has established the presence of the following medical conditions: cardiac diseases – 115 cases (17.85±1.51%); respiratory diseases – 90 cases (13.97±1.36%); urinary diseases – 183 cases (28.41±1.78%); gastroenterological diseases – 74 cases (11.49±1.26%); dermatological diseases – 57 cases (8.85±1.12%); endocrine disorders – 65 cases (10.09±1.19%);

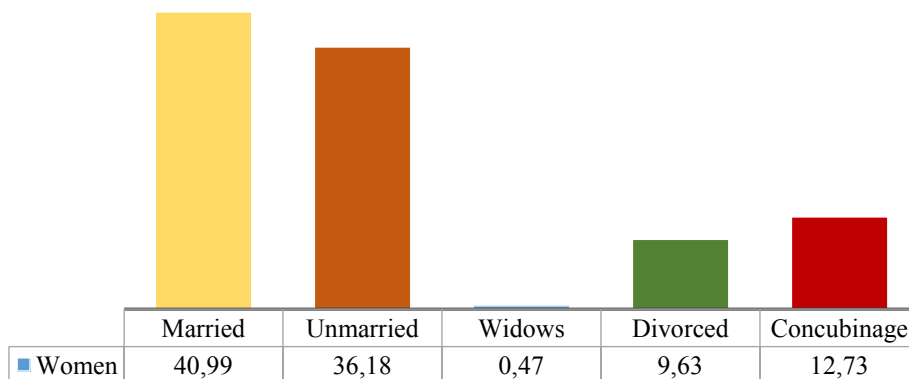


Fig. 1. Marital status of patients with APID (%).

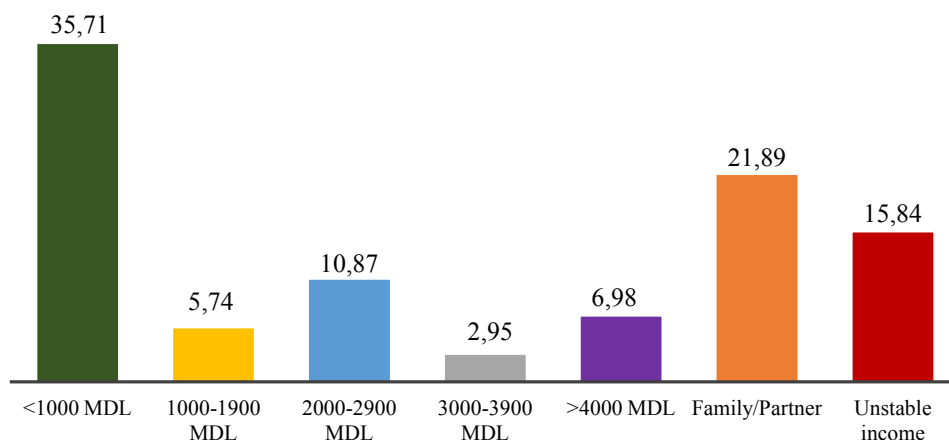


Fig. 2. Monthly income for patients with APID (%).

ophthalmologic diseases – 44 cases (6.83±0.99%); ENT diseases – 23 cases (3.57±0.73%); psychiatric disorders – 8 cases (1.24±0.43%); infectious diseases – 60 (9.31±1.14%); neurological disorders – 32 cases (4.97±0.85%).

We have observed that 243 patients (37.73±1.91%) had two coexistent medical conditions, and in 92 cases (14.28±1.38%) – three or more associated diseases ($t = 9.9327, p < 0.001$). This shows that 52.01% of the patients are carriers of chronic diseases and other coexistent medical conditions, which accounts for a prevalence in a third of the patients. The patients with APID had a higher incidence of bacterial vaginosis, which was observed in 225 cases (34.93±1.88%). Other gynecological diseases encountered in these patients were: genital malformations – 7 cases (1.09±0.41%), endometriosis – 34 cases (5.28±0.88%), uterine myoma – 50 cases (7.76±1.06%), ovarian cysts – 58 cases (9.00±1.13%), menstrual disorders – 88 cases (13.66±1.35%), genital polyps – 19 cases (2.95±0.67%); infertility – 73 cases (11.33±1.25%). Based on the records, we have identified that 381 patients (59.16±1.94%) have given birth, of which 223 women were primiparous (34.62±1.87%) and 158 – multiparous (24.53±1.69%) ($t = 3.9967, p < 0.001$). 263 women from the studied group were nulliparous (40.84±1.91%) ($t = 6.7031, p < 0.001$).

Based on the records regarding the medical history, 208 of the studied patients had abortions based on their own will (32.29±1.84%); 61 women had abortions due to stagnating pregnancies (9.47±1.16%), and 40 women had abortions due to ectopic pregnancies (6,21±0.95%) and for 97 women – abortions were spontaneous (15.03±1.41%) ($\chi^2 = 12.4, gl = 3, p < 0.01$). Of the total number of patients with APID, 40.83% were nulliparous cases, primiparous – 34.62% of patients, 24.53% – multiparous. Abortions have been conducted based on the patients' own will in 32.29% of cases and was the most widely accepted method of family planning.

Due to the analysis of the group of patients using services of systematic dispensarization, we could establish that 144 of them (22.36±1.64%) are being monitored by the family doctor, 45 of them (6.98±1.01%) are monitored by the gynecologist from the system of outpatient care, 74 of the patients (11.49±1.26%) attend annually prophylactic controls at their workplace, and 381 females (59.16±1.94%) do not visit the doctor.

In this study, we have analyzed the type of hospital admission for patients with APID, based on the referrals: for 38 patients, the referral was from the family doctor (5.90±0.93%), for 82 patients – from the gynecologist

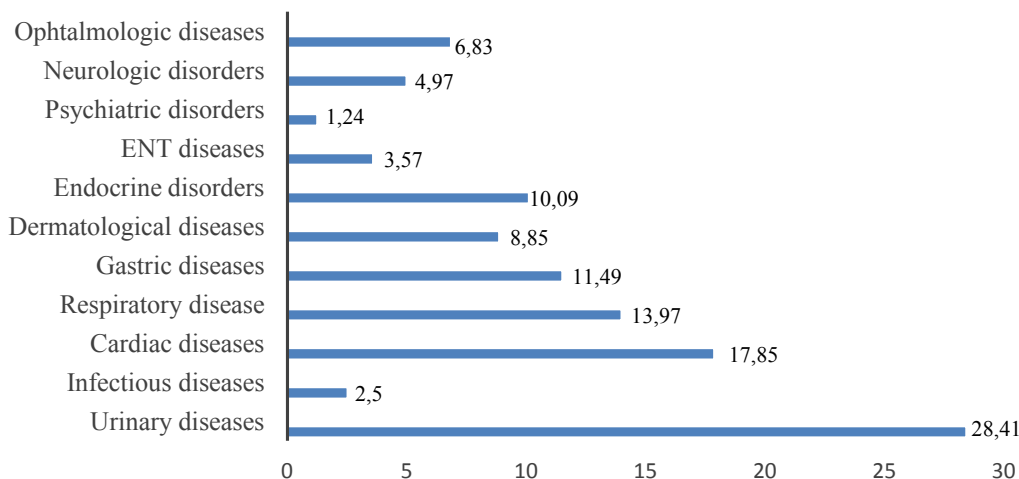


Fig. 3. Medical history of patients with APID (%).

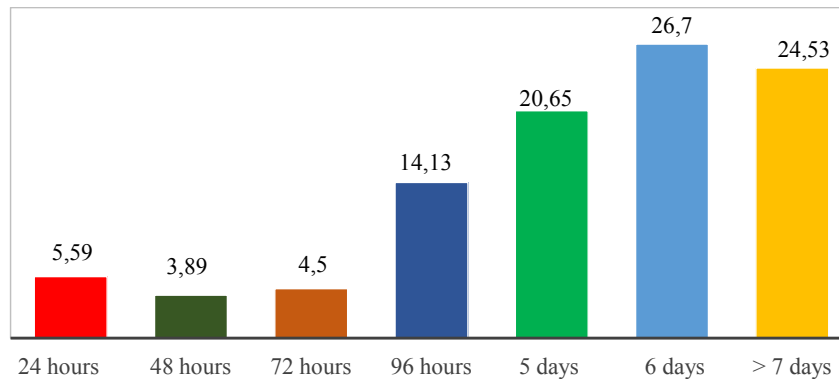


Fig. 4. The time period between the onset of the disease and hospitalization (%).

(12.73±1.31%), for 57 patients – from other medical institutions (10.40±1.20%), and in 70.96% of cases the primary level of healthcare has been avoided entirely. The diagnosis of APID was established by ambulance service teams (47.36%) and by physicians from policlinics (29.03%). The ambulance service was used in 305 cases (47.36±1.97%), self-admission – 152 patients (23.60±1.67%) ($\chi^2 = 16.3$, $gl = 4$ $p < 0.01$).

In addition to this, we have assessed the time period between the onset of the disease and the admission to the hospital, the type of admission and the part of the day when the patient has been admitted. Admission at the hospital, based on the onset of the disease, has been conducted in the first 24 hours – 36 patients (5.59±0.91%), in the first 48 hours – 25 women (3.89±0.76%), during the first 72 hours – 29 females (4.50±0.82%), during the first 96 hours – 91 patients (14.13±1.37%), first 5 days – 133 women (20.65±1.59%), first 6 days – 172 patients (26.70±1.74%), 7 days after the onset – 158 females with APID (24.53±1.69%) ($\chi^2 = 19.1$, $gl = 6$, $p < 0.01$).

The delays observed between the onset of the disease and admission to the hospital may be explained by the patients' misinterpretation of the arising complaints, or it can be associated with atypical forms of APID. Approximately 71.89% of the patients included in the study were given a belated hospitalization 5 days after the onset of the disease, which indicates that women postpone seeking medical help, even when the clinical signs are obvious and the general condition worsens. We also have determined the part of the day, when the patients with APID, are seeking medical help more frequently. The results were as follows: 68 patients have been hospitalized between 00:00-03:00, (10,56±1.21%); between 04:00-07:00 – 95 patients (14,75±1.39%), between 08:00-11:00 – 173 patients (26,86±1.75%); between 12:00-15:00 – 87 patients (13,51±1.35%), between 16:00-19:00 – 56 patients (8,69±1.11%) and between 20:00-23:00 – 165 patients (25,62 ±1.72%) ($\chi^2=12,3$, $gl=5$, $p<0,05$).

Conclusions

The results of the study have allowed us to establish the profile of the APID patient: young women, under

25 (40.38%), unmarried in more than half of the cases (59.01%), 2/3 of patients come from rural areas and live in urban areas at an unfavorable socio-economic level in 3/4 of cases; they lack medical insurance in 32.45% cases; they have an irregular income (25.93%) and do not possess a permanent residence (43.63%). Two thirds of the cases (72.67%) are represented by women with a low level of education, who have admitted starting their sexual life before turning 16 (52.64% cases). One fourth of the patients had more than 3 sexual partners during their lifetime (25.46%).

The data from the study allows us to conclude that APID patients are women of childbearing age – 75.64% (40.34% – nulliparous; 34.63% – primiparous), and in more than one third of the cases they had abortions based on their own will (41.5%). Around 52.01% of these women are carriers of chronic diseases, in one third of the cases there have been identified urinary infection, a higher incidence of bacterial vaginosis and history of abnormal onset of the menstrual cycle.

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