Examination of Pap Smear as A Screening Lesion of Cervical in Muaro Pijoan Village Working Area of Puskesmas Sungai Duren, Muaro Jambi District, Jambi Provence

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Abstract, Cervical cancer is a primary savage tumor that comes from squamous epithelial cells. It is the second killer after mammary cancer for women in developing countries including Indonesia. The incidence of cervical cancer in Indonesia increases that causes woman death in their productive age. Pap smear is one of method of cancer screening which is efficacious, simple, and cost effective. By applying pap smear in developing countries, the incidence of invasive cervical cancer has been reduced around 46-76% and the mortality has been declined around 50-60%. This study aims to describe clinic ocytopathology of pap smear in Muaro jambi village, Muaro Jambi district, Jambi province. This is prospective descriptive observation study at Pathology Anatomic Department of Medical Faculty, Jambi University. The data was obtained from all women that have been examined for pap smear in the public health Sungai Duren, Muaro Jambi district in July 2018. The range distribution of patients was found in 22.00-62.00 years old, multiparty woman (75.0%) with cervical chronic non specific (37.0%) and Negative for Intraepithelial Lesion (NILM) (34.0%), 20 woman with Atypical Squamous Cell of Undetermined Significance (ASCUS), 1 woman with Low Grade Squamous Intraepithelial Lesion (LSIL) and 1 woman with High Grade Squamous Intraepithelial Lesion (HSIL) as moderate dysplasia. The highest distribution abnormality of squamous epithelial cell was 41 years old, multipara (100%). Moderate dysplasia (HSIL) was woman with hormonal contraception. The incidence abnormal epithelial cervical cell was highest on 46 years old woman, with hormonal contraception and multiparty. The description of abnormal epithelial cervix cells was found to be ASCUS.

1. Introduction
Cervical cancer is the fourth most common cancer in women with an estimated of 530,000 new cases in 2012 representing 7.9% of all female cancers. About 90% of 270,000 cervical cancer deaths in 2015 occurred in low and middle income countries (shrestha, Neupane, Vedsted, Kallestrup, 2018). In
Indonesia, there are 100-900 cases of cervical cancer per 100,000 population, and deaths due to this disease are mainly associated with most stages of cervical cancer, which are invasive, advanced and even terminal stages at the time of diagnosis (Hidayat, Hasibuan, Fitriyati, 2014; Hidayat, Hasibuan, Fitriyati, 2013; Nindrea, 2017). World health organization (WHO) publishes the speed of cervical cancer globally will increase 50% in 2020. Regular examination of cervical smear can reduce cancer deaths by as much as 40%, especially in women over 50 years of age. In populations with extensive screening coverage, the incidence of cervical cancer drops to 70-90%, while in populations without screening, the incidence of cervical cancer continues to be in initial conditions (Hyacinth, Adekeye, Ibeh, Osoba, 2012). There must be an effective mass screening program aimed at certain age groups to detect precancerous conditions before they develop into invasive cancer. Detection of abnormal epithelial cells according to the Bethesda system guidelines is a system used in detecting precancerous lesions in cervical smear (Nanchiketha, 2009).

This service was conducted from April-October 2018. Pap smear examination was performed on July 18, 2018 which was located the working area of Sungai Duren Community Health Center who holds in Muaro Pijoan Village, Muaro Jambi district with activities such as counseling and pap smear examination. This service was expected to increase the awareness of productive women to have routinely checked to reduce mortality caused by cervical cancer.

2. Method
This research was prepared during April to June 2018 and pap smear examination was conducted on 18 of July, 2018, located in foster village of Jamb i University, Muaro Pijoan Village, in the working area of Sungai Duren Community Health Center, Muaro Jambi District. This research was conducted by direct examination on the participants and education of pap smear. Clinical characteristics assessed were age, parity, type of contrast used, and type of infection while cytopathological variables with abnormalities of epithelial cells according to Bethesda classification were Negative for Intraepithelial Lesion (NILM), Atypical Squamous Cell of Undetermined Significance (ASCUS), Low Grade Squamous Intraepithelial Lesion (LSIL), High grade squamous Intraepithelial Lesion (HSIL), Squamous cell carcinoma and Glandular Cell Abnormalities (Nayar & Wilbur, 2015).

3. Results and Discussion
This community service was conducted on July 18, 2018 in Sungai Duren public health, Muaro Jambi district, Jambi. This activity was performed by directly sampling cervical smear by a pathologist with the help of several midwives and students of FKIK Jambi University. Pap smear examination was performed on one hundred women from Sungai Duren population that were married or had performed sexual activity within the age range below 65 years.

Cervical smear samples were taken to Anatomical Pathology Laboratory in Faculty of Medical and Health Science of Jambi University to be read and assessed. Clinical variables assessed were age, parity, type of contraception and infection, while cytopathological variable was the characteristics of epithelial cell abnormalities according to Bethesda criteria, i.e. negative for Intraepithelial Lesion (NILM), Atypical Squamous Cell of Undetermined Significance (ASCUS), Low Grade Squamous Intraepithelial Lesion (LSIL), High grade squamous Intraepithelial Lesion (HSIL), squamous cell carcinoma and glandular cell abnormality. The recapitulation of pap smear results in the form of clinical and cytological variables can be seen in Appendix 3. Table 1 explains the characteristics of all the subjects according to age, parity, menopause, contraception and cytopathology result. The average age was 38.18 ± 8.517 years old with 5 or 5.0% nulliparous, 15 or 15.0% primiparous, 75 or 75.0% multiparous and 5 or 5.0% grand multiparous. There were 10 or 10.0% menopause patients and 90 or 90.0% non-menopause patients. There were 9 or 9.0% patients used IUD, 11 or 11.0% used pills, 19 or 19.0% used injection, 5 or 5.0% used implant, 1 or 1.0% used condom, 1 or 1.0% used MOW and 52 or 52.0% did not use any contraceptive method. There were 34 or 34.0% with NILM results, 37 or 37.0% with non-specific chronic cervical NILM, 20 or 20.0% ASC-US, 7 or 7.0% atrophic smear NILM, 1 or 1.0% LSIL and 1 or 1.0% dysplasia.
Table 1. Clinical characteristic

| Variable       | n=100   |
|----------------|---------|
| Age (years)    | 38.18±8.517 |
| Mean±Std       | 38.00   |
| Median         | 22.00-62.00 |
| Range (min-max)| 38.18±8.517 |
| **Parity**     |         |
| Nullipara      | 5(5.0%) |
| Primipara      | 15(15.0%) |
| Multipara      | 75(75.0%) |
| Grandemultipara| 5(50.0%) |
| **Menopause**  |         |
| Yes            | 10(10.0%) |
| No             | 90(90.0%) |
| **Contraception** |       |
| IUD            | 9(9.0%) |
| Pill           | 11(11.0%) |
| Injection      | 19(19.0%) |
| Implant        | 5(5.0%) |
| Condom         | 3(3.0%) |
| MOW            | 1(1.0%) |
| No/ Others     | 52(52.0%) |
| **Cytopathology** |     |
| NILM           | 34(34.0%) |
| NILM + Non specific chronic cervicalitis | 37(37.0%) |
| ASC-US         | 20(20.0%) |
| Athropic Smear NILM | 7(7.0%) |
| LSIL           | 1(1.0%) |
| Moderate dysplasia (HSIL) | 1(1.0%) |

Table 2 explains about cytopathology based on the age. Mean age of NILM result was 35.67±7.425 years old, mean age of NILM Non specific chronic cervical result was 36.83±7.772 years old, mean age of ASC-US result was 38.55±6.778 years old, mean age of Atrophic smear NILM result was 54.14±4.598 years old, and mean age of LSIL and HSIL (Moderate Dysplasia) results were 46.00 years old.

Table 2. Cytopathology based on age

| Variable | NILM       | NILM Non specific chronic cervicalitis | ASC-US       | Athropic Smear NILM | LSIL       | HSIL       |
|----------|------------|----------------------------------------|--------------|---------------------|------------|------------|
| Mean±Std | 35.67±7.425| 36.83±7.772                            | 38.55±6.778  | 54.14±4.598         | 46.00      | 46.00      |
| Median   | 35.00      | 35.00                                  | 41.00        | 53.00               |            |            |
| Range (min-max) | 23.00-49.00 | 22.00-51.00                           | 27.00-49.00  | 48.00-62.00         | -          | -          |

Table 3 explains about cytopathology based on parity. Most cytopathology results were found in multipara. NILM was 73.5% multipara, NILM Non specific chronic cervical was 81.1% multipara, ASC-US was 65.0% multipara, Atrophic smear NILM was 71.4% multipara, and LSIL and HSIL (Moderate Dysplasia) were 100% multipara.
Table 3. Cytopathology based on parity

| Variable    | Cytopathology          |
|-------------|------------------------|
|             | NILM | NILM Non specific chronic cervicalitis | ASC-US | Atrophic smear NILM | LSIL | HSIL (Moderate dysplasia) |
| Nullipara   | n    | N     | n | N   | N   | N   |
| 3 (8.8%)    | 1 (2.7%) | 1   | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Primipara   | 5 (14.7%) | 6 (16.2%) | 4 (20.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Multipara   | 25 (73.5%) | 30 (81.1%) | 13 (65.0%) | 5 (71.4%) | 1 (100.0%) | 1 (100.0%) |
| Grandemultipara | 1 (2.9%) | 0 (0.0%) | 2 (10.0%) | 2 (28.6%) | 0 (0.0%) | 0 (0.0%) |

Table 3 explains about cytopathology based on parity. NILM result was more common in nullipara (3 (8.8%)) than other parity groups. ASC-US result was more common in primipara (6 (16.2%)) than multipara (13 (65.0%).) While, Atrophic smear NILM result was more common in grandemultipara (2 (10.0%)) than other parity groups.

Table 4 explains about cytopathology based on menopause status. NILM result was more common in non-menopause patients (94.1%) than menopause patients (5.9%). ASC-US result also was more common in non-menopause patients (95.0%) than menopause patients (5.0%). While, Atrophic smear NILM result was more common in menopause patients (85.7%) than non-menopause patients (14.3%). NILM Non specific chronic cervical and HSIL (Moderate Dysplasia) result in non-menopause patients (100.0%) and LSIL result in menopause patients.

| Variable  | NILM | NILM Non specific chronic cervicalitis | ASC-US | Atrophic smear NILM | LSIL | HSIL |
|-----------|------|--------------------------------------|--------|---------------------|------|------|
| Menopause | N=   | N=                                   | N=     | N=                  | N=   | N=   |
| Yes       | 2 (5.9%) | 0 (0.0%) | 1 (5%) | 6 (85.7%) | 1 (100%) | 0 (0.0%) |
| No        | 32 (94.1%) | 37 (100%) | 19 (95%) | 1 (14.3%) | 0 (0.0%) | 1 (100%) |

Table 4 explains about cytopathology based on menopause status. NILM result was more common in non-menopause patients (94.1%) than menopause patients (5.9%). ASC-US result also was more common in non-menopause patients (95.0%) than menopause patients (5.0%). While, Atrophic smear NILM result was more common in menopause patients (85.7%) than non-menopause patients (14.3%). NILM Non specific chronic cervical and HSIL (Moderate Dysplasia) result in non-menopause patients (100.0%) and LSIL result in menopause patients.

Table 5 explains about cytopathology based on contraceptive method. The results show in NILM, NILM Non specific chronic cervical, ASC-US, Atrophic smear NILM, and LSL more patients did not use any contraceptive method. They were 52.9%, 48.6%, 45%, 85.7%, and 100.0%. All of patients with HSIL (Moderate Dysplasia) results used injection contraceptive (100.0%).

| Variable | NILM | NILM Non specific chronic cervicalitis | ASC-US | Atrophic smear NILM | LSIL | HSIL |
|----------|------|--------------------------------------|--------|---------------------|------|------|
| IUD      | 5 (14.7%) | 1 (2.7%) | 2 (10.0%) | 1 (14.3%) | 0 (0.0%) | 0 (0.0%) |
| Pill     | 3 (8.8%) | 5 (13.5%) | 2 (10.0%) | 0 (0.0%) | 0 (0.0%) | 1 (100%) |
| Injection| 6 (17.6%) | 8 (21.6%) | 5 (25.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Implant  | 0 (0.0%) | 3 (8.1%) | 2 (10.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| condom   | 2 (5.9%) | 1 (2.7%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| MOW      | 0 (0.0%) | 1 (2.7%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| No       | 18 (52.9%) | 18 (48.6%) | 9 (45.0%) | 6 (85.7%) | 1 (100%) | 0 (0.0%) |

Table 5 explains about cytopathology based on contraceptive method. The results show in NILM, NILM Non specific chronic cervical, ASC-US, Atrophic smear NILM, and LSL more patients did not use any contraceptive method. They were 52.9%, 48.6%, 45%, 85.7%, and 100.0%. All of patients with HSIL (Moderate Dysplasia) results used injection contraceptive (100.0%).

In the Bethesda system the term Squamous cancer precursor was changed to Squamous Intraepithelial Lesion (SIL). Based on the presence of HPV in the event of changes in cervical cells, SIL is divided into 2 degrees, namely low grade SIL or Low grade SIL (LSIL) and high degree SIL or High grade SIL (HSIL). In this system LSIL refers to CIN 1 and HSIL referring to CIN 2 and 3. Bethesda System Workshop in 2001, made modifications to the form of reports and terminology on cervical smear (Nayar & Wilbur, 2015). One of the most important things in reading the Pap smear results
recommended in the Bethesda System is a statement on the adequacy of specimens. In adequate specimens also reported the presence of cervical cells or transformation of zone cells, inflammatory cells, red blood cells, drying artifacts. The disruption of epithelial cell evaluation because of the large number of inflammatory cells or red blood cells also determines the adequacy of specimens. If more than 75% of epithelial cells cannot be seen and assessed, the specimens will fall into the inadequate category (Nayar & Wilbur, 2015; Bora, Chowdury, Mahanta, Kundu, Das, 2017). The application of cervical cancer screening in Indonesia has a current target age of 30-50 years. Screening at the age of > 30 years is done every 3 years if the results are normal on pap smears and negative for HPV testing. If a positive or unsatisfactory result is obtained, it is better to repeat the pap smear within two or three months. If the results show the presence of cancer, of course, you should immediately get further treatment. In table 2 shows the picture of cervical smear microorganisms most commonly found is non-specific cervical followed by candida and trichomonas vaginal. Candida and trichomonas infections can be found together or stand alone. It is usually found in women with bad hygiene, immunosuppression and pregnancy (Haltas, Bayrak, Yenidunya, 2012; Sabu, Nayak, Nair, Shetty, 2017; Fauziah, Wirawan, Lorianto, Utari, Cahyanur, Budiningsih, 2011). The pervasive phase latent period takes around 10 years become invasive. LSIL includes moderate and mild dysplasia. Several studies have shown that some periods for cervical carcinoma post-plasia are 12% after 5 years, 18% after 10 years and 30% after 20 years (Newswire, 2014; Ting, Tse, Lam, Chan, Leung, 2017)). The Banik Research, conducted at the Gynae Outpatient Department (GODP) of a tertiary hospital in Bangladesh which examined 1699 women with a cross-sectional design obtained a cytopathological picture of 91.81% with NILM, 0.18% with ASCUS, 0.12% with AGC, 6.36% with LSIL, and 0.35% with malignancy (Banik, Ahamad, Bhattacharjee, Adhikary, Rahman, 2013).

Frequent pregnancy and childbirth can also increase the risk of cervical cancer in women. The relationship between frequent pregnancy and childbirth and cervical cancer may be due to a decreased of cervical ability to maintain the transformation zone of the ectocervical against HPV infection. In addition, hormonal factors can also play a role (Nachiketha, 2018)). In the study, the significant results were obtained between the use of hormonal contraception and the incidence of epithelial cell abnormalities. (p = 0.022). Obtaining ASCUS, LSIL and HSIL, abnormalities had a significant correlation with the use of implant and injection contraception. The presence of hormonal balance disorders greatly affects changes in cervical epithelial cells. The most common picture is atrophy picture which is almost same with intraepithelial lesions picture in cervical cells. Atrophy vaginitis was found at older ages and at the age of menopause. This study shows that there was vanities atrophy at age above 55 years, but this condition can also be found at a young age using long hormonal contraception (Sheikhholeslami, Sotodel, Javadi, Nasirian, Kazemivar, Abassi, 2013; Abdullah, Bawotong, Jamel, 2013; Paramita, Soewarto, Aris, Bambang, 2010). The increase in risk factors for hormonal contraception with the incidence of cervical cancer associated with metabolic estrange by the CYP1A1 enzyme.

4. Conclusion

According to the results of community service in Muaro Pijoan Village, Muaro Jambi district, Jambi, Indonesia, the following conclusion is drawn:

- The population was very enthusiastic to participate in this activity, even though there were several women in productive age who were afraid of pap smear examination. The number of participants fulfilled the target of 100 people in 2 effective days.
- The population that participated in pap smear program was in the age range of 22-62 years, mostly were multiparous and did not use any contraceptive method.
- The results of pap smear cytopathology were mostly negative for intraepithelial lesion or malignancy (NILM) with non-specific chronic cervical.
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