

CORRELATION BETWEEN AGE AND PAP SMEAR QUALITY ASSESSMENT OF INFECTION AND TISSUE CHANGES

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ABSTRACT

The purpose of this study, the most common complications of vaginal infection in women North West of microbiology and histopathology techniques and how staining Cytochemical staining of white blood cells in the vaginal area to identify the exact Cells based on their reaction . Cluster sample were collected in Ali Nasab hospital Department of Pathology patients pathology with age from 19 to 53 years Provided that the total of 94 patients and 11 samples from each patient were available slides. Samples immediately after sampling were fixed with ethanol, methanol and acetone and transported to the laboratory According to Sigma - Aldrich Cytochemical staining was performed .First Infection was assessed by staining agents Papa Nicolas hospital and then to confirm the Color Gram, Giemsa and Periodic acid Schiff was performed. Later in the normal microflora Fungal stained with Giemsa, toluidine blue and periodic acid-Schiff, the normal bacterial microflora, Warm color, normal microflora protozoa stained with Giemsa toluidine blue and periodic acid-Schiff were examined.

KEY WORDS: *Pap smear, Vaginal, Women north, west*

Introduction

Vaginal douching is the process of intravaginal cleansing with a liquid solution. Douching is used for personal hygiene or aesthetic reasons, for preventing or treating an infection (Aral SO., Mosher WD., Cates W Jr., 1992), to cleanse after menstruation or sex, and to prevent pregnancy (Chacko MR., McGill L., Johnson TC et al., 1989). For at least 100 years, there have been conflicting views on the benefits or harm in douching. Although there is a broad consensus that douching should be avoided during pregnancy, there is less agreement regarding douching for hygiene and relief of vaginitis symptoms. Two earlier reviews of douching data in women (Zhang J., Thomas AG., Leybovich E., 1997) and adolescents (Merchant JS., Klerman LV., 1999) have concluded that douching is harmful and should be discouraged because of its association with pelvic inflammatory disease, ectopic pregnancy, and perhaps other conditions. Nonetheless, douching continues to be a common practice. We seek to review the evidence of the impact of douching on women's health.

Materials and Methods

Sterile speculum, sterilized cotton swab, slide glass, diamond pen, ethanol, methanol, All of absolute acetone, Kits of Heat stain, Giemsa, Ziehl-Neelsen, blue Toluidine Also Chloroethyl acetate AS-D kits myeloperoxidase, Sudan black B, Alpha- naphthalene propanoic acetate esterase, acid phosphatase, Periodic acid-Schiff all manufactured by Sigma - Aldrich, production of Germany. The results of the Papanicolaou staining in the Tabriz Ali Nasab Eram Hospital on the same samples were performed. Olympus microscope with magnification imaging company X100.

Sampling

By information from hospital documents of Tabriz in the sampling Pap smear and through carried out former coordination to hospital admission, and women who, because of problems Vaginal Pap test were referred to hospital in the age category 19 to 55 years of sample were collected. Attending random cluster sampling from each patient 11 slides of vaginal mucous samples were taken immediately after sampling and drying slides Fixation solution, all samples were fixed.

Preparation of samples and vaginal smear:

Vaginal mucosa samples were taken from each of 11 slides By cotton swabs and slides all of by The dried slides were coded by diamond pen temporary solution Fixation unit for 1 share as ethanol, methanol and 3 share 1 share of acetone was prepared and then fixed in the box Preparation of documentation and the Laboratory of Immunology we've transferred Lahijan Azad University. In order to Evaluation of the infection of 1 Lam of each sample was Papanicolaou staining. The slides were stained for confirmation the presence of Normal bacterial flora of bacteria and detection of Heat. In order to confirm the diagnosis of fungus infections of Lam Papa Nicolas one Lam from each sample Toluene were painted by blue color. Ziehl-Neelsen staining for the detection of M. Then we did it. In the Next to detect protozoan normal flora as well as the pattern of leukocyte one Lam The slides were stained with Giemsa stain series of data based on cell morphology White, staining the white blood cells in the population are considered to be preliminary So if there is a disruption in the collection of samples, so Evaluation of white blood cells Influence is clarified. In order to Evaluation of the differential diagnosis of mature cells based on Lvkvheat Classic 5 ID epithelial cells made , white blood cell patterns, coloring Cytochemical Chloroethyl esterase, Alpha-naphthalen propanoic Phosphatase acetate esterase, acid-AS-D myeloperoxidase, Sudan black B, Nftvl Phosphatase, Periodic acid-Schiff using commercial kits manufactured by Sigma-Aldrich .

Staining

Heat staining method

First slides put on the tray with a solution of 1 volume of ethanol, 1 volume of methanol and 3 volumes of acetone-fixed and after Transfer to the prepared slides laboratory staining. A few drops of crystal Violets slides and throw on lams for about a minute then we wait, during this time all bacteria will be purple. After washing with water, juice, crystal violet by adding Lvgl are established for a minute. Heat crystal violet combined creation Complexes above the crystal violet dye fixing inside the bacterial cell wall A. After this step, all the bacteria continue to appear purple.

After this step washed Lam with water .then decolorization that is the most important step of staining will be begin.

Review of stained expansion

Because the needs of all groups of leukocyte cells and mature properly and accurately and with The ability to separate from one another very much known appearance of white blood cell morphology The expansion of the painted colors and patterns observed in Cytochemical staining was compared Rvmanvfsky case and extensive pattern recognition pentavalent White blood cells were obtained. Expansion which features a stained expansion not appropriate was excluded in the Review sample.

Assess the suitability of specimens for Pap tests

Assess the suitability of the sample to be tested by staining by Papa Nicolas The pathologist examined and the results are divided into three categories, namely within Epithelial , beginning cellular changes , see descriptive diagnosis , normal limits cell abnormality , see descriptive diagnosis.

Pathogen detection

Lam stained with Papanicolaou colors, heating, Giemsa, blue toluidine and acid periodic. Schiff were included to identify the pathogen and normal flora diagnosis. Review slides Olympus microscope imaging done on the basis of Heat stain morphology Kvkvbasy bacilli and heat-positive bacteria and negative, yeast and protozoa observed. With purple bacteria are heat positive and heat negative part is pink It also changes with leukocyte cells in the vaginal area and observed Gnjdgy Epithelial cells rather than study for detection of viruses and bacteria. Therefore intracellular buildup of both subspecific taxa was divided into 4 categories causative factors which are respectively viral , Protozoan , Bacterial , Fungal.

Changes in cell morphology

All changes in appearance of including changes in inflammatory cells, epithelial cells, abnormal, Operative changes acute or chronic infection Papanicolaou staining were examined and Which were classified in the following way. The response of tissue cells into three categories: low, moderate, and severe tissue reactions were divided into three categories: Typical repair, Follicular cervicitis and Atrophic vaginitis. Abnormalities of the epithelial cells are divided in three categories: Atypical squamous cells of undetermined significance, High or low grade squamous intraepithelial lesion and Invasive squamous cell carcinoma .also, the percentage of people was examined who have an acute inflammation.

Results

Assessment the suitability of specimens for Pap tests:

Assessment of the suitability of the sample to be tested with staining Papa Nicolas was evaluated by a pathologist. The following results were found. In the age group 15-25 years, 85.71% of the sample coordinated with option: within normal limits and 14.29% of the sample coordinated with option: beginning cellular changes see descriptive diagnosis. There was not found any sample coordination with specifications option: Epitelial cell abnormality, see descriptive diagnosis.In the

age group 25-35 years, 86.05% of the sample coordinated with option: within normal limits, 13.95% of the samples coordinated with option: see descriptive diagnosis, beginning cellular changes. There was not found any sample coordination with specifications option: Epitelial cell, abnormality, see descriptive diagnosis. In the age group 35-45 years, 93, 10% of the sample coordinate with option: within normal limits and 6.90percent of people sample Coordinated with the options : beginning cellular changes , see descriptive diagnosis . There was not found any sample coordination with specifications option : Epitelial cell abnormality , see descriptive diagnosis . In the age group 45-55 years, 87, 50% of the sample coordinated with option: within normal limits and 50% of the sample coordinated with option: see descriptive diagnosis, beginning cellular changes. There was not found any sample coordination with specifications option: abnormality, see descriptive diagnosis, Epitelial cell.

The State of histological changes

This series of changes in staining PAS were evaluated and the results are as follows. 64.29% of people in the age group 15-25 years are among those with the situation: Typical repaire. 71% of Follicular cervicitis show and no case of Atrophic vaginitis. 51.16% of people in the age group 25-35 years are among those with the situation : Typical repaire . 91percent of patients show : Follicular cervicitis nd there was not any case of Atrophic vaginitis. 65.52percent of patients are placed in the age group 35-45 years among those with the situation: Typical repaire . 48percent of patients show Follicular cervicitis and there was any case of Atrophic vaginitis . 75.00percent of patients in the age group 45-55 years are placed among those with the situation Typical repaire , 5,00percent of patients show Follicular cervicitis and there was any case of Atrophic vaginitis.

Check the use of squamous epithelial cells

In most epithelial cells with cores staining in pink purple and dense seen we atypical them to be warm and Periodic acid-Schiff staining examined and found the following results. In the age group 15-25 years, no cases were found for the options: Atypical squamous cells of undetermined significance. 71% of cases were High or low grade sequamous intraepithelial lesion. No case was not found about Invasive squamous cell carcinoma. In the age group 25-35 years, 30% of them were placed on the option Atypical squamous cells of undetermined significance , 88% of the option High or low grade sequamous intraepithelial lesion, No case was not found about Invasive squamous cell carcinoma. In the age group 35-45 years, 17.24% were placed of the option Atypical squamous cells of undetermined significance. 4.14% of the option High or low grade sequamous intraepithelial lesion, It also showed 10.34% of the Invasive squamous cell carcinoma, In the age group 45-55 years, zero percent were placed of the option Atypical squamous cells of undetermined significance , 50% were of the option High or low grade sequamous intraepithelial lesion. The zero percent indicated the Invasive squamous cell carcinoma.

Discussion

Significant correlation between the quality of the numerical difference Pap smear (Cervicovaginal) with variable inflammation and symptoms indicate that it is prepared to expand This feature in samples from the age of 15-25 years to provide the best view of the microscopic observer puts and then aged 25-35 years and 35-45 years age group and the 45-55 year age group with the lowest

quality of these features have been shown. It is proved that the lower age of the patient in the study of microscopic quality indicators Inflammatory be reliable (Z: - 2.521, Sig: 0.012).

According to what was said earlier there is any correlation between the levels of inflammation and its association with Quality Pap smear Cytotoxic Pathology studies and research provided the base for us to investigate Microbiology can be reached to the conclusion that the visible inflammation and Its association with tissue reactions that lead to visible changes epithelial cells Cervicovaginal particularly because statistical correlation between symptoms of viral infection and inflammation Vacuolization of lymphocytes, monocytes, with particularly strong activity in the acute inflammatory conditions Statistics have shown their solidarity and intense process of beginning and end of the inflammatory response Mononuclear cell dependent immunity against viral infections specifies (Z: - 2.431, Sig: 0.015).

Because of the correlation between the degree of epithelial cells in the microscopic Due to the expansion of cervicovaginal infections can be stated that the most important factor in the age group 15-25 years cervicovaginal infections of bacterial and fungal agent is then While this feature is 25-35 years and 35-45 years of age as well as to the cause of fungal and bacterial agent. In all three of these ages protozoal agent is ranked third place. In the age group 45-55 years protozoal agent was not observed and the bacterial agent is significantly more effective than fungal agent. Symptoms changes in the 15-25 year epithelial tissue squamous lesions of levels of symptoms. While these features are aged 25-35 years and sometimes in very few cases involving symptoms indistinguishable from the effects of squamous epithelial cells.

In the 35-45 ages highest detectable changes in the shape of squamous epithelial tissue lesions and low to high the signs are undetectable and less visibility in the context of invasive carcinoma Squamous epithelial. The women in this age are more prone carcinomatous changes have been detected by this method. At the age of 45-55 years, the only sign of damage to the epithelial tissue squamous epithelial tissue changes from low to high (Z: - 2.756, Sig: 0.006).

In all cases, the degree of inflammation, inflammation and serious clinical always delivered with a variety of symptoms by the patient or the doctor has discovered. Due to common infectious agents. The above-mentioned age and degree of epithelial tissue tissue changes especially in the age 25-15 years had the highest intensity and the most common reason for referral to medical centers and laboratories and the age groups 25-35 years, followed by 35-45 years of age and final are placed 45-55. Indicating that age due to a lack of sensitivity problems Cervicovaginal the other hand, due to the perceived severity of the inflammatory response in the area The aging population and the increasing number of cervicovaginal inflammation of the experience Cervicovaginal reduced or less likely to be referred microscopy experiments or Inflammation caused by the body, the most important of all ages microbial agents in the above-mentioned reduced (Z: - 2.312, Sig: 0.021).

Due to the transition of virginity at the age of 15-25 years or experience in health and use of chemicals or pharmaceuticals advantage of tracking changes in inflammatory cell basophilic is indicator of inflammatory responses that are sensitive to nature . In this age of 25-35 years of age, and then 45-55 years and 35-45 years of age with the lowest incidence of microscopic attention to quality can be applied to such that the having of the episode pregnancy and breastfeeding at age 25-45 years significant reduction in clinical infections The hormonal changes in cervicovaginal destructive age 45-55 years lower incidence of allergic inflammatory responses to be expected. It Should not be forgotten that the recommendations of Physical and hormonal methods of prevention

or preventive physical and chemical methods are combined. At the age of marriage, especially after a number of successful pregnancies have been asked and that happens more aged 25-45 years. Can cause serious allergic reactions relative reduction in the area under study. There was a significant correlation between changes in cervicovaginal epithelial cells indicates that there are too many differences in the ages of 15-35 years, with signs of tissue reaction with Squamous epithelial tissue damage, high or low levels in women was more visible and at the age of 35-45 years, the prevalence of this condition is still greatly reduced and tissue reactions also show a decreasing trend ($Z: -2.934$, $Sig: 0.003$). Based on the findings of this study suggested that by using of Lam Pap smear microscopy studies alone. Be revised to assess the full and exact etiology of cervicovaginal infections. Cytochemical staining using these methods to track changes in the function of immune cells in cervicovaginal mucus so that the each of at least two specific staining methods is utilized to replace the conventional technique.

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References

- Aral SO., Mosher WD., Cates W Jr. 1992.** Vaginal douching among women of reproductive age in the United States. *Am J Public Health.*82:210-14.
- Chacko MR., McGill L., Johnson TC et al. 1989.** Vaginal douching in teenagers attending a family planning clinic. *J Adolesc Health Care.*10:217-19.
- Zhang J., Thomas AG., Leybovich E. 1997.** Vaginal douching and adverse health effects: a meta-analysis. *Am J Public Health.*87:1207-11.
- Merchant JS., Klerman LV. 1999.** Douching: a problem for adolescent girls and young women. *Arch Pediatr Adolesc Med.*153:834-7.