OBJECTIVE: to analyze the presence of pathogens in the smoke generated by electrocautery during the cauterization procedure of warts caused by the Human Papilloma Virus.

METHOD: cross-sectional, descriptive study with a quantitative approach. Data will be collected through filters with the aid of a smoke cleaner and an instrument containing the sociodemographic characterization and the environment where the collection will be held. The data will be analyzed by the reaction method of polymerase chain and descriptive statistics, inferential and multivariate analysis. This study was approved by the Ethics Committee in Research of the State University of Londrina/UEL under CAE: 53181516.7.0000.5231.

EXPECTED RESULTS: to identify possible pathogens present in the smoke that could expose workers to risks during the execution of the procedure. Assist the service in the pursuit of strategies aimed at implementation of measures for protection of these professionals.

DESCRIPTIONS: Virus; Bacteria; Cauterization; Surgical Smoke.

RESUMO: analisar a presença de patógenos na fumaça gerada pelo eletrocautério, durante o procedimento de cauterização de verrugas causadas pelo vírus Papiloma Vírus Humano. Método: estudo transversal, descritivo, com abordagem quantitativa. Os dados serão coletados por meio de filtros, com auxílio de um aspirador de fumaça e de um instrumento, contendo a caracterização sociodemográfica e do ambiente onde será realizada a coleta. Os dados serão analisados pelo método de reação em cadeia da polimerase e por estatística descritiva, inferencial e análise multivariada. Este estudo foi aprovado pelo Comitê de ética em pesquisa da Universidade Estadual de Londrina/UEL sob CAE: 53181516.7.0000.5231. Resultados esperados: identificar possíveis patógenos presentes na fumaça que possam expor o trabalhador a riscos durante a execução do procedimento. Auxiliar o serviço na busca de estratégias que visem à implantação de medidas para proteção desses profissionais. Descriptores: Virus; Bactérias; Cauterização; Fumaça Cirúrgica.
INTRODUCTION

The Human Papilloma Virus (HPV) is a sexually transmitted disease (STD) growing fast in recent years, among men and women in the sexually active age, and the most diagnosed STD between 1998 and 2001 and its incidence has increased over the years, with the Human Immunodeficiency Virus (HIV).

Condom use is not common in adolescents who start early sex life, especially in the age group of 15 to 19 years.

There are several treatment modalities for HPV, including topical medications, that are known as treatment by chemical method. Among the topical medications, trichloroacetic acid (TAA) is effective in mucosal lesions, but has limitations in keratinized skin. Other forms of treatment for this viral disease are surgical ablation, as electrocoagulation (excision and laser therapy), methods made with electrocautery. This topical disease has a high incidence of recurrence, as in the case of large and multieentric warts, which are resistant to drug treatment.

Since its an effective method, the use of electrocautery has been growing gradually and with it the concern for the safety of professionals and patients exposed to this technique. Air contaminants generated by the use of electrocautery may form during the interruption of tissue cells by heat. This procedure causes the release of plume that may contain viable bacteria, viruses, cell debris, particles, harmful and toxic aerosols, gases, vapors or fumes.

The electrocautery used at low temperatures generates the tissue vaporization producing bioaerosols that comprise biohazards. Such biological pollutants are suspended in a large number of particles, including intact cells, debris or blood cells may contain bacteria or viruses such as tuberculosis mycobacterium, HIV, hepatitis B virus (HBV), hepatitis C virus (HCV) and HPV producing a risk of infection to workers that is still not quantified for workers.

The smoke produced by electrocautery is constituted by a mixture of extremely diverse chemicals in the form of gas, vapor and particulate components where the generated pollutants can be present as organic pollutants, inorganic and organic, and can create dangerous effects, local or systemic, reversible or irreversible to those using this technology.
through elements of PICC (population, intervention, comparison and closing) strategy,\textsuperscript{9} it was possible to find only one article with exploratory methodology that describes the presence of HPV in the smoke of electrocautery during the laser cauteronization procedure.\textsuperscript{10}

That same literature search was not possible to identify studies that include other pathogens which can be found in suspension after use of electrocautery in venereal warts, which justifies this study.

**OBJECTIVES**

- To analyze the presence of pathogens in the smoke generated by electrocautery during the cauteronization procedure of warts caused by the Human Papilloma Virus.

**MÉTODHO**

A cross-sectional, descriptive study with a quantitative approach will be carried out, with patients treated at the referral center for contagious infectious diseases in a city in northern Paraná from April to July 2016.

Inclusion criteria is to be male, have medical indication for the cauteronization procedure of venereal warts in the institution and exclusion criteria: patients undergoing treatment of cauteronization of venereal warts by chemical method.

The smoke generated by electrocautery will be collected during the cauteronization procedures of warts caused by HPV. For purposes of the survey two smoke vacuums will be used. The filters used in the vacuum will be analyzed by PCR method of reading and the data will be analyzed using the *Statistical Package for the Social Sciences* / SPSS, version 20.0, using inferential descriptive statistics, and multivariate analysis.

The ethical guidelines established in Resolution No. 466/2012 of the National Health Council will be followed, which establishes parameters for research involving humans. Thus, participants will be duly informed according to the objectives highlighting the secrecy related to information obtained in the questionnaires, respecting the autonomy of individuals, respecting their decision to participate or not in this study. The research project was approved by the Research Ethics Committee, under CAAE: 53181516.7.0000.5231.

**EXPECTED RESULTS**

When identifying which pathogens are present in the smoke generated by electrocautery during the cauteronization procedure of venereal warts caused by HPV is to establish with the service measures to minimize worker exposure and consequently the possible complications from inhaling the smoke generated during these procedures, establishing regulations for the proper use of PPE.

**REFERENCES**


8. Ball K. Surgical smoke evacuation guidelines: compliance among perioperative


Submission: 2016/02/19
Accepted: 2016/07/08
Publishing: 2016/08/01

Corresponding Address
Luana Cristine dos Santos Oussaki
Rua José Manoel de Souza, 75, Ap. 102
Bairro Vale dos Tucanos
CEP 86046-541 – Londrina (PR), Brazil