



Comparison of outcomes of Cold Coagulation Vs Large Loop Excision of the Transformation Zone (LLETZ) For High-Grade Dyskaryosis, Cure Rates and Complications

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Abstract

Background: Cold coagulation is an ablative method, and Large Loop Excision of the Transformation Zone (LLETZ) is an excisional method for treating high-grade Dyskaryosis (cervical intraepithelial neoplasia, i.e., CIN 2 and 3).

Objective: This is a comparative study of cure rates and complications in women who had CIN2 or CIN3 and were treated with cold coagulation versus Large Loop Excision of the Transformation Zone (LLETZ) at 6- and 18-months post-treatment.

Method: It is a retrospective cohort study of women with CIN2 or CIN3 treated with cold coagulation or LLTEZ between March 2017 & March 2018.

Results: Cold Coagulation had 82%, and LLETZ had an 87% cure rates at six months follow-up. On the other hand, for those patients seen at 18 months, Cold Coagulation and LLETZ had 71% and 62% cure rates, respectively.

Conclusion: Cold coagulation cure rates was comparable to those of LLETZ in the short term and were better in the outcome in the long term.

Keywords:

Cervical Intra-epithelial Neoplasia, cold coagulation, Large Loop Excision of the Transformation Zone (LLTEZ)

Introduction

Gynaecological cancers account for 10% of all cancers diagnosed in women and 12% of cancer deaths.[1] Cervical cancer is the fourth most common cancers in women according to the International Federation of Gynaecology and Obstetrics (FIGO). Early detection and treatment of pre-invasive lesions have proven to prevent it.[1] According to WHO, cervical cancer is one of the four major leading cancers in women in 2020, accounting for 604,000 new cases and 342,000 deaths.[2] It is also shown that 90% of these new cases and deaths occurred in low and middle-income countries.[2]

In Ireland, 250-290 women are diagnosed with cervical cancers annually, according to the Irish Cancer Society and the Health Services Executive (HSE). Cervical Screening is offered to all ladies aged 25-65. In women aged 25 to 29 years old, it is provided every three years. In those aged 30 to 65, every five years. Cervical Pathology is mainly caused by HPV (the most oncogenic strains of HPV are HPV 16 & HPV 18). Other oncogenic strains include HPV 31, 33, 35, 39, 45, 51, 52, 56, 58, 66 and 69. Almost all people who are sexually active are exposed to HPV, and this infection affects the basal cells of the cervical epithelium within the transformation zone.

Objective

This is a comparative study between the cure rates and complications in women who had cervical biopsies with evidence of cervical intraepithelial neoplasia grade 2 (CIN2) or 3 (CIN3) and treated with Cold-Coagulation versus Large Loop Excision of the Transformation Zone (LLETZ) to evaluate which management method has a higher cure rate and lower complications at 6- and 18-months post-treatment, using HPV negative status and the cervical smear as tests of cure (TOC).

Methods

This study was a cross-sectional cohort study of women having had cervical treatment for CIN2 or CIN3 on pre-treatment cervical biopsies between March 2017 & March 2018, in Wexford General Hospital, Wexford, Ireland. The cure rates were defined as the negative HPV DNA and normal cervical smears done at 6- and 18-months post-treatment. Data were collected retrospectively and analyzed using Excel Sheets.

Results

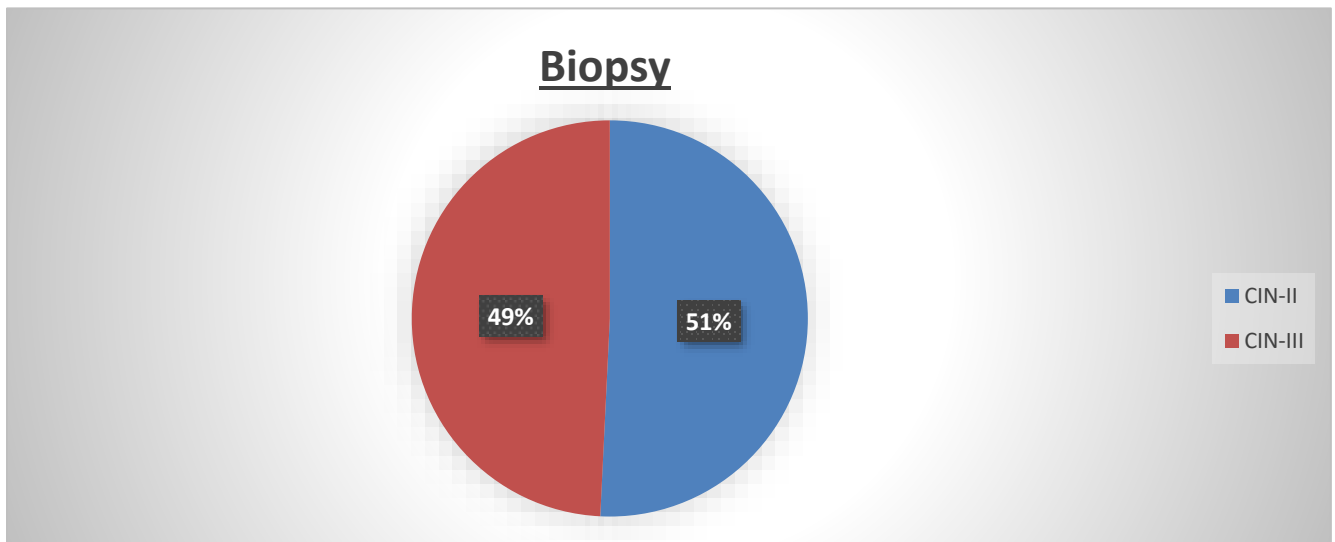


Figure 1: The Pie chart shows the proportion of both CIN2 to CIN3 after taking a cervical biopsy.

	Cold Coagulation	LLETZ
6 Months	82%	87%
18 Months	71%	62%

Table 1: The Table shows the cure rate of Cold Coagulation Vs LLETZ

Approximately 69% of ladies were between 30 and 50 years, 5% were more than 50 and 26% were less than 30 years. Nearly, 49% of ladies had CIN-III, while, 51% were CIN-II in the pre-treatment Histology.

On one hand, Cold Coagulation had an 82% cure rate, compared to 87% in LLETZ, in 6 months follow-up. On the other hand, for those patients who needed to be seen in 18 months, Cold Coagulation had a 71% cure rate, while, the cure rate of LLETZ was 62% in LLETZ 18-month follow-up. Repeating LLETZ procedure was done in only two patients. Whereas, Hysterectomy was done for only one patient due to non-cure in 18 months and other Gynaecological indications. Similarly, two patients requested to transfer their care to different hospitals for different reasons.

After both treatment methods, we couldn't detect any complications of note except one lady who needed to be seen again after she developed vaginal bleeding post-LLETZ treatment. She was managed by applying Silver Nitrate sticks to the bleeding area.

Discussion

Treatment of cervical intraepithelial lesions can be done using ablative or excisional procedures. Excisional procedures are to be done only by highly trained personnel. The complications of this procedure include the risk of late miscarriage, preterm births, and cervical stenosis in future.[3,4] However, ablative methods include cold coagulation, cryotherapy, laser ablation, an electrocoagulation diathermy, which can be done in an outpatient setting.[3-8] Kurt Semm developed the Semm cold coagulator in 1969.[6,9] The coagulator uses electricity to produce a temperature of 100–120°C and is applied to the transformation zone for nearly 30 seconds ablating the lesion by boiling. If the size of the transformation zone is large, the coagulator can be used 2-4 times around the transformation zone. LLETZ involves excision using a thin wire loop with an electrical current running through it to remove the abnormal area. Studies have shown that cold coagulation doesn't have a long-term impact on fertility and minimal risk of complications. [10,11] LLTEZ is associated with the risk of preterm deliveries and miscarriage in subsequent pregnancies. [3,4,12,13,14] The greater the amount of tissue removed, the higher the risk of prematurity.[14]

Conclusion

We found that women with high-grade dyskaryosis on pre-treatment cervical punch biopsies had higher cure rates when treated with cold coagulation versus LLETZ in 18 months post-treatment and vice versa for cure tests after six months. Cure rates of both procedures were comparable. Similarly, the possibility of complications is very low in both treatment methods.

Conflict of Interest

The authors declare No conflict of interest.

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