

Aparecida Cristina Sampaio  
Monteiro<sup>1</sup>

Fábio Russomano<sup>1</sup>

Aldo Reis<sup>II</sup>

Maria José de Camargo<sup>1</sup>

Susana Aidé Fialho<sup>1</sup>

Maria Aparecida Tristão<sup>III</sup>

Thiers Soares<sup>1</sup>

# Effectiveness of see-and-treat for approaching pre-invasive lesions of uterine cervix

## Efetividade da abordagem “ver e tratar” em lesões pré-invasivas no colo uterino

---

### ABSTRACT

**OBJECTIVE:** To compare the effectiveness between the see-and-treat (S&T) approach and the conventional one (with prior biopsy) for squamous intraepithelial lesions of uterine cervix.

**METHODS:** A cross-sectional study was conducted with 900 nonpregnant women with cytology suggestive of high grade squamous intraepithelial lesions in the city of Rio de Janeiro, Southeastern Brazil, between 1998 and 2004. The S&T approach consists of a large loop excision of the transformation zone procedure and is recommended when cytology is suggestive of high grade squamous intraepithelial lesion, satisfactory colposcopy with abnormalities compatible with the suspected cytological results, and the lesion is limited to the ectocervix or extends up to one centimeter of the endocervical canal. A subgroup of 336 patients whose colposcopy was considered satisfactory was analyzed, and they were divided into two groups for comparison: patients treated without prior biopsy (n = 288) and patients treated after a biopsy showing high grade squamous intraepithelial lesions (n = 48). Patients who were not treated or only treated more than a year later after recruitment at the colposcopy unit were considered dropouts.

**RESULTS:** Of patients recruited during the study period, 71 were not treated or were only treated for at least a year. The overall dropout rate was 7.9% (95% CI: 6.1;9.7). Mean time elapsed between patient recruitment and treatment was 17.5 days in the S&T group and 102.5 days in the prior biopsy group. Dropout rates were 1.4% (95% CI: 0.04;2.7) and 5.% (95% CI: 0;12.3), respectively (p=0.07). The proportion of overtreated cases (negative histology) in the S&T group was 2.0% (95% CI: 0.4;3.6).

**CONCLUSIONS:** The difference in the mean time elapsed between patient recruitment and treatment indicates that S&T is a time-saving approach. The proportion of negative cases from using the S&T approach can be regarded as low.

**DESCRIPTORS:** Cervix Uteri, pathology. Colposcopy, classification. Cervical Intraepithelial Neoplasia. Uterine Cervical Neoplasms, diagnosis.

<sup>1</sup> Departamento de Ginecologia. Instituto Fernandes Figueira (IFF), Fundação Oswaldo Cruz (Fiocruz). Rio de Janeiro, RJ, Brasil

<sup>II</sup> Departamento de Obstetrícia. Faculdade de Medicina de Campos. Rio de Janeiro, RJ, Brasil

<sup>III</sup> Departamento de Patologia. IFF. Fiocruz. Rio de Janeiro, RJ, Brasil

**Correspondência | Correspondence:**  
Aparecida Monteiro  
Instituto Fernandes Figueira – Depto  
Ginecologia  
Av. Rui Barbosa, 716 – Flamengo  
22250-020 Rio de Janeiro, RJ, Brasil  
E-mail: acsmont@uol.com.br

---

## RESUMO

**OBJETIVO:** Comparar a efetividade do método “ver-e-tratar” (V&T) com a abordagem tradicional (biópsia prévia) das lesões escamosas intraepiteliais do colo uterino.

**MÉTODOS:** Trata-se de um estudo transversal realizado na cidade do Rio de Janeiro, RJ, de 1998 a 2004, com 900 pacientes não gestantes que apresentavam citologia sugestiva de lesão intraepitelial escamosa de alto grau. O método V&T inclui a excisão ampla da zona de transformação que é indicada quando a citologia é sugestiva de lesão intra-epitelial escamosa de alto grau, a colposcopia é satisfatória e compatível com a alteração citológica e a alteração colposcópica deve estar limitada à ectocérvice e ao primeiro centímetro do canal cervical. Foi analisado o subgrupo de 336 pacientes com colposcopias consideradas satisfatórias, compreendendo dois grupos para comparação: pacientes tratadas sem biópsia prévia (n=288) versus pacientes tratadas após a biópsia mostrando lesão intraepitelial escamosa de alto grau (n=48). Foram consideradas perdidas as pacientes não tratadas ou tratadas apenas um ano ou mais após recrutamento pela clínica de colposcopia, no grupo V&T.

**RESULTADOS:** Das pacientes recrutadas durante o período do estudo, 71 não foram tratadas ou foram tratadas apenas um ano mais tarde, fornecendo uma taxa global de abandonos de 7,9% (IC 95%: 6,1;9,7). O tempo médio entre a captação da paciente e o tratamento foi de 17,5 dias no V&T e 102,5 dias no grupo biópsia prévia. As taxas de perdas foram de 1,4% (IC 95%: 0,04;2,7) no grupo V&T e de 5,9% (IC 95%: 0;12,3) no de biópsia prévia (p=0,07). A proporção de tratamentos desnecessários (histologia negativa) no grupo V&T foi 2,0% (IC 95%: 0,4;3,6).

**CONCLUSÕES:** A diferença de tempo médio entre a captação da paciente e o tratamento indicou que o V&T é um método que poupa tempo. A proporção de casos negativos quando o método V&T foi utilizado pode ser considerada baixa.

**DESCRITORES:** Colo do Útero, patologia. Colposcopia, classificação. Neoplasia Intra-Epitelial Cervical. Neoplasias do Colo do Útero, diagnóstico.

---

## INTRODUCTION

The “see-and-treat” (S&T) approach for high-grade intraepithelial squamous lesions (HSIL) of uterine cervix consists of performing both diagnosis and treatment in one single visit. In Brazil, this approach was launched in 1997 as part of the National Program<sup>a</sup> for Uterine Cancer Management, *Viva Mulher*, to treat pre-invasive cervical lesions. The S&T approach included a large loop excision of the transformation zone (LLETZ)<sup>9</sup> procedure and is recommended when cytology is suggestive of HSIL (or cervical intraepithelial neoplasia grades 2 or 3 - CIN 2/3), satisfactory colposcopy (transformation zone completely visible) with abnormalities compatible with the suspected cytological results, and the lesion is limited to the ectocervix or extends up to one centimeter of the endocervical

canal. The main objective of the S&T approach is to reduce the odds of losing patients with precursor lesions after cytological screening. However, one of its disadvantages is potential unnecessary treatments as claimed by other authors.<sup>1,2,3,5,11</sup>

The traditional approach with a targeted biopsy for diagnostic confirmation requires more medical visits before the actual treatment of the lesions.<sup>11</sup> This causes increased anxiety to patients, which can in turn lead to dropout before treatment.<sup>2</sup> It also increases care cost (in cases where treatment is required).

The S&T approach has been used at the Colposcopy Unit of the Department of Gynecology at *Instituto Fernandes Figueira, Fundação Oswaldo Cruz (IFF/*

---

<sup>a</sup> Sociedade Brasileira de Patologia do Trato Genital Inferior e Colposcopia. Rio de Janeiro. Manual de Cirurgia de Alta Frequência. 1998.

FIOCRUZ), since 1998 following the guidelines of the National Program for Uterine Cancer Management. The traditional approach is used when S&T criteria are not met.

The objective of the present study was to compare the effectiveness of S&T to the conventional approach (with prior biopsy) in squamous intraepithelial lesions of uterine cervix.

## METHODS

From October 1998 to December 2004, 900 nonpregnant patients with cytology suggestive of HSIL through the screening program for cervical cancer and precursor lesions were recruited in the city of Rio de Janeiro, southeastern Brazil, as well as through informal referrals from primary health care units. We tabulated the number of patients who ended up not being treated or were only treated for up to a year after recruitment.

We retrospectively analyzed the subgroup of 336 patients whose colposcopy was considered satisfactory, and they were divided into two groups for comparison: (1) S&T group – patients submitted to LLETZ procedure without prior biopsy, and having met the study criteria, and (2) prior biopsy group – patients submitted to LLETZ after prior biopsy showing HSIL (Figure).

LLETZ was performed under local anesthesia as an outpatient procedure. When colposcopic abnormalities were incompatible with the cytological results, a biopsy was performed for subsequent treatment if HSIL was confirmed (conventional approach). In this case, the biopsy was also performed under local anesthesia. When the squamocolumnar junction (SCJ) was not visible or the transformation zone (TZ) extended beyond one centimeter into the canal, the patient was referred for conization in the operating room, and excluded from the study.

Some patients in the S&T group were not submitted to this approach on the same day either because they were menstruating, had colpitis, or SCJ was not totally visible in the first visit. These patients were then scheduled for another visit after their menstrual period or after either treatment of colpitis or estrogen preparation.<sup>a</sup> They remained in their original group as they had not undergone biopsy prior to the treatment. This may also explain the mean time elapsed between patient recruitment at the unit and treatment implementation is greater than zero. Other patients were not submitted to this approach due to logistic problems (lack of equipment or supervisory staff, patient preference) and went through the prior biopsy approach.

We estimated the mean time elapsed between patient capture at the colposcopy unit and treatment in those submitted to LLETZ, excluding those patients who were already recruited with biopsy consistent with HSIL performed before being referred to IFF/FIOCRUZ. We then compared the two approaches for the rate of dropouts without treatment among patients with satisfactory colposcopy. We considered dropouts in the S&T group when patients had major colposcopic alterations but were not treated or were only treated more than a year later. In the prior biopsy group, we considered those patients who had a biopsy showing HSIL but were not treated or were treated only more than a year later.

We also verified the histological diagnoses in those patients submitted to LLETZ in the S&T approach to evaluate the proportion of overtreated cases.

The study data were analyzed using SPSS (version 8.0). To test the difference between means, Student's t-test was used, and to test the difference between proportions of dropouts Fisher's exact test was used. A 5% level of significance was set.

## RESULTS

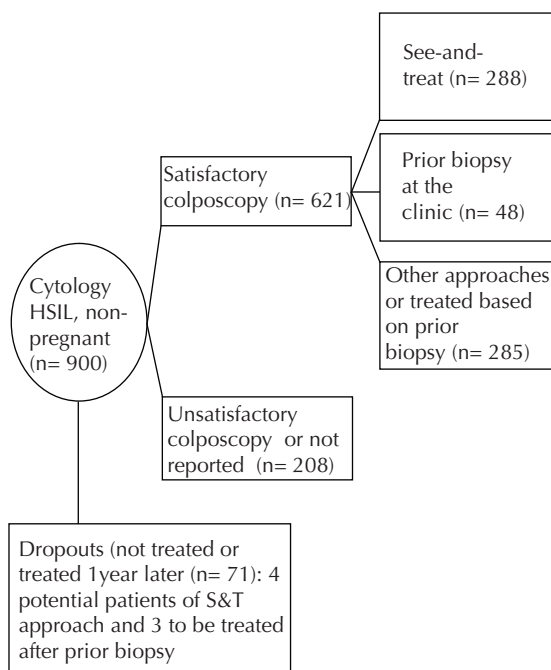
The Figure shows the study population and its subgroups. Of 900 nonpregnant patients with cytology consistent with HSIL who were recruited during the study period, 71 ended up not being treated or were treated only a year later, and were classified as return after dropout. The overall dropout rate was 7.9% (95% CI: 6.1;9.7) regardless of the proposed approach.

Excluding those patients who brought in the results of biopsies performed before recruitment, 336 patients submitted to LLETZ (288 in the S&T group and 48 in the prior biopsy group) were considered treated. Table 1 shows a comparison of mean time by approach (S&T *versus* prior biopsy).

Seven patients with characteristics that would include them in the two groups analyzed (four candidates for the S&T approach and three with biopsy showing HSIL) failed to show up for treatment (Table 2). In the two groups those patients who dropped out of follow-up after recruitment were the ones who had indication for an operating procedure due to an extensive lesion or had a treatment for colpitis. The difference in the proportion of dropouts in the two groups was not significant.

To evaluate overtreatment, the histological diagnosis of 298 patients submitted to LLETZ without prior biopsy that matched the S&T criteria was described (Table 3). The proportion of negative cases was 2.0%, they were considered overtreatment.

<sup>a</sup> Conjugated estrogens, 0.625 mg (oral) seven to ten days prior to the next colposcopic examination.



**Figure.** Representation of the study population and subgroups. City of Rio de Janeiro, Southeastern Brazil, 1998–2004.

## DISCUSSION

Our sample was drawn from the cervical cancer prevention program in the city of Rio de Janeiro. Patients were submitted to oncological colposcopy in primary health care units.

The fact that there were cases eligible for the S&T approach but who were not treated during the first visit may explain the dropout rate and the mean time greater than zero between check in at the colposcopy unit and LLETZ.

The difference in mean time indicates that S&T is a time-saving approach where treatment is provided 5.8-fold as fast as compared to the prior biopsy approach. It highlights major advantages of this approach: it requires fewer visits to the health care unit, and fewer hours of work missed, and potentially reduces patient anxiety. It also indicates greater cost savings, since a prior biopsy is not required. This saving should be weighted against the cost of overtreatment in further economic analysis studies. Sadan et al (2007)<sup>10</sup> concluded that S&T approach may shorten the time between diagnosis and treatment with similar accuracy of diagnosis compared to the traditional protocol (prior biopsy).

The low overall proportion of dropouts is due to active search of patients who failed to show up at their appointments, and does not reflect the reality of most

**Table 1.** Comparison of mean time between both approaches studied (S&T versus prior biopsy group). City of Rio de Janeiro, Southeastern Brazil, 1998–2004.

Approach	Cases (n)	Mean time between capture and treatment (days)	SD
S&T	288	17.5	42.2
Prior biopsy	48	102.5	81.5

$p < 0.0001$  (Student's *t*-test)

Brazilian health services. In our study there was no significant difference in the proportion of dropouts between both approaches. There might be a difference but it was not statistically significant at a 5% level due to the small sample size (beta error). The difference found is clinically relevant, and should it actually exist, it would be an important advantage in the S&T approach. Megevand et al (1996)<sup>6</sup> conducted a two-phase study in which patients in the first phase with abnormal cytology were referred for colposcopy and treatment in a hospital 20 kilometers away from the unit where cytology was performed. In the second phase, cytology, colposcopy, and treatment were performed at the same unit. They reported that 66% of the patients with cytology showing HSIL in the first phase ended up not undergoing colposcopy or receiving the required treatment, while in the second phase this rate was 1.3%. They concluded based on these results that the majority of patients with abnormal cytology would have colposcopy and treatment if cytological reports were more readily available and there were greater availability of colposcopy and treatment. This could be achieved if diagnosis and treatment were both performed in the first session.

According to Denny et al (1995),<sup>2</sup> the reduction in patient dropouts (without adequate treatment) is one of the main advantages of S&T approach and in their study there were no patient dropouts when S&T was used. Powell (1996)<sup>8</sup> believes that this policy could potentially lead to reduced costs to patients in terms of time and money, resulting in better compliance with treatment and follow-up.

The proportion of negative cases (2.0 %) seems too low to refrain from using the S&T approach given its advantages. If we add to these cases the low-grade intra-epithelial neoplasias (CIN I and HPV infection without CIN – LSIL), we would have a proportion of 6.7% of cases which may not require treatment. However, we should note that these patients had cytology suggestive of high-grade lesion with colposcopically consistent lesions, in which a more aggressive diagnostic approach may be justified. Santos et al (1996)<sup>11</sup> found a 2% overtreatment rate with biopsies performed before treatment, which might have removed the abnormal cervical area and contributed to this low proportion.

**Table 2.** Comparison of the proportion of dropouts in both approaches studied (S&T versus prior biopsy group). City of Rio de Janeiro, Southeastern Brazil, 1998–2004.

Approach	Potential patients (n)	Dropouts (n)	%	95% CI
S&T	292	4	1.4	0.04;2.7
Prior biopsy	51	3	5.9	0;12.3

p = 0.07 (Fisher's exact test)

Luesley et al (1990)<sup>5</sup> report a 23% rate of histology with coil cytosis only, which they considered an acceptable rate given the procedure's low morbidity, thus justifying continued use of the approach. According to Denny et al (1995),<sup>2</sup> biopsy prior to treatment should be considered in patients with low-grade cytology since 44% of the histopathology cases without disease were patients with cytology CIN I. Kattukaran et al (2002)<sup>4</sup> consider that the risk of unnecessary treatment is greater in patients with LSIL and recommend that S&T be used exclusively in women with high-grade cytology and consistent colposcopic findings. Murdoch (1995)<sup>7</sup> also considers that the impact of overtreatment can be managed with the adoption of a simple algorithm whereby only patients with moderate or severe dysplasias and compatible colposcopy have "see and treat" LLETZ. The major concern regarding this policy is its potential for overtreatment.<sup>7</sup> We agree with these authors that the

**Table 3.** Final histological diagnosis in 298 patients submitted to LLETZ without prior biopsy. City of Rio de Janeiro, Southeastern Brazil, 1998–2004.

Definitive diagnosis	Cases (n)	%	95% CI
LSIL <sup>a</sup>	20	6.7	3.9;9.5
HSIL <sup>b</sup>	263	88.3	84.6;91.9
Cancer (invasive or microinvasive)	5	1.7	0.2;3.1
Negative	6	2.0	0.4;3.6
Nonconclusive	4	1.3	0.1;2.6
Total	298	100	

<sup>a</sup> Low-grade intraepithelial neoplasia (CIN I and HPV infection without CIN);

<sup>b</sup> High-grade intraepithelial neoplasia (CIN II or CIN III).

risk of overtreatment can be reduced with the use of the procedure by skilled colposcopists and by limiting its indication to high-grade cytology cases.

In conclusion, the S&T approach when used based on appropriate criteria can be highly valuable as part of a protocol to manage precursor lesions of cervical cancer. It also saves time and possibly financial resources of both health care services and patients. The proportion of unnecessary treatments was small and we find it acceptable in light of the advantages provided by the S&T approach.

## REFERENCES

1. Das SS, Elias AH. Diagnosis and treatment of cervical intraepithelial neoplasia in a single visit. *Aust N Z J Obstet Gynaecol.* 1998;38(3):246-50. DOI: 10.1111/j.1479-828X.1998.tb03058.x
2. Denny LA, Soeters R, Dehaeck K, Bloch B. Does colposcopically directed punch biopsy reduce the incidence of negative LLETZ? *Br J Obstet Gynecol.* 1995;102:545-48.
3. Ferris DG, Hainer BL, Pfenninger JL, Zuber TJ. "See and treat" electrosurgical loop excision of the transformation zone. *J Family Pract.* 1996;42(3):253-57.
4. Kattukaran A, Kekre A, Jose R, Seshadri L. See & treat protocol for evaluation & management of cervical intraepithelial neoplasia. *Indian J Med Res.* 2002;116:106-10.
5. Luesley DM, Cullimore J, Redman CW, Lawton FG, Emens JM, Rollason TP, et al. Loop diathermy excision of the cervical transformation zone in patients with abnormal cervical smears. *BMJ.* 1990;300(6741):1690-93. DOI: 10.1136/bmj.300.6741.1690
6. Megevand E, Van Wyk W, Knight B, Bloch B. Can cervical cancer be prevented by a see, screen, and treat program? A pilot study. *Am J Obstet Gynecol.* 1996;174(3):923-28. DOI: 10.1016/S0002-9378(96)70327-7
7. Murdoch JB. The case for early intervention ('see and treat') in patients with dyskaryosis on routine cervical screening. *Int J STD AIDS.* 1995;6(6):415-7.
8. Powell B. The use of large loop excision of the transformation zone (LLETZ) in an outpatient setting. *Aust N Z J Obstet Gynaecol.* 1996;36(3):338-46. DOI: 10.1111/j.1479-828X.1996.tb02725.x
9. Prendiville W, Cullimore J, Norma S. Large loop excision of the transformation zone (LLETZ). A new method for management for women with cervical intraepithelial neoplasia. *Br J Obstet Gynecol.* 1989;96(9):1054-60.
10. Sadan O, Yarden H, Schejter E, Bilevsky E, Bachar R, Lurie S. Treatment of high-grade lesions: A "see and treat" versus a three-step approach. *Eur J Obstet Gynecol Reprod Biol.* 2007;131(1):73-5. DOI: 10.1016/j.ejogrb.2005.12.025
11. Santos C, Galdos R, Alvarez M, Velarde C, Barriga O, Dyer R, Estrada H, Almonte M. One-session management of cervical intraepithelial neoplasia: a solution for developing countries. Randomized Trial of LEEP versus Laser Excisional Conization. *Gynecol Oncol.* 1996;61(1):11-5. DOI: 10.1006/gyno.1996.0088