

# A Literature Review of Alternative Medical Treatment for High-Grade Cervical Intraepithelial Neoplasia

## INTRODUCTION

Cervical cancer is the 4<sup>th</sup> most common cancer amongst females worldwide and the 10<sup>th</sup> most common cancer amongst females in Singapore. It is mainly caused by human papillomavirus (HPV) infection, which can persist to cause cervical intraepithelial neoplasia (CIN), a pre-malignant state of the cervix. Globally, the mainstay of treatment for high-grade (high-grade CIN refers to CIN 2-3) is surgery, which may involve an excisional procedure or ablative therapy. However, there is an increased risk of preterm birth in pregnancies following excisional therapy, and access may be limited in low-resource countries, where the rates of cervical cancer-related mortality are the highest. New medical therapies are being explored to overcome barriers to surgical therapies for high-grade CIN. This literature review aims to explore these investigational therapies and their efficacies.

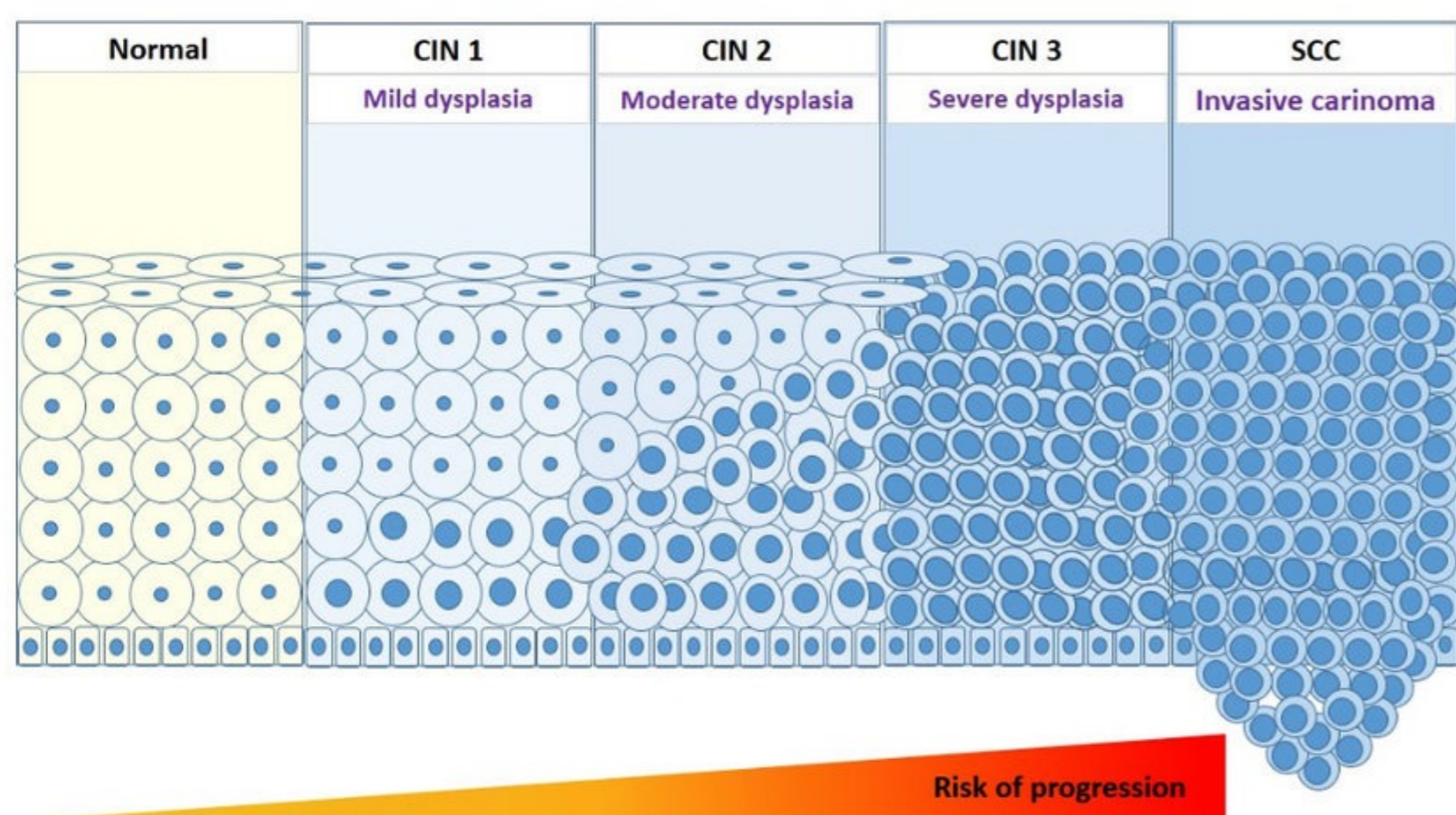


Figure 1. Progress of CIN to cervical cancer

## METHODS

PubMed, EMBASE and The Cochrane Library were searched for reviews, randomised controlled trials and meta-analyses pertaining to medical therapies for high-grade CIN.

## RESULTS

Currently, therapeutic HPV vaccines are being evaluated as treatment therapies for CIN 2-3. Most of these vaccines have HPV E6 and E7 viral proteins as target antigens. E6 and E7 proteins are abundantly expressed in premalignant and malignant cells, and are not expressed in healthy tissues, which make them ideal targets for treatment.

## RESULTS (CONT)

Whilst clinical trials have showed potential for these therapeutic vaccines in treating CIN 2-3, the cure rates are lower than that of excisional or ablative therapies (54% vs >90%). Topical Imiquimod, an immune-response modulator, has shown potential as an effective treatment for CIN 2-3 as it promotes regression, as well as increases clearance rates of high-risk HPV, with minimal side effects. Adjuvant prophylactic HPV vaccination administration has been shown to reduce the risk of CIN recurrence and promote CIN regression. Other experimental therapies, such as cidofovir (antiviral) and 5-Fluorouracil (anti-metabolite) show promising evidence as CIN 2-3 treatment, however, are limited by their side effects.

## CONCLUSION

There is promising evidence that alternative medical therapies are feasible for the treatment of patients with high-grade CIN, however, further research is imperative.

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