Measurement of Nuclear DNA in the Management of Cervical Intraepithelial Neoplasia*

A. Pellicer and R. E. Herzog

Universitäts-Frauenklinik Mainz (Direktor: Prof. Dr. V. Friedberg), Langenbeckstrasse 1, D-6500 Mainz, Federal Republic of Germany

Summary. Cytophotometry was used to study the DNA content in 166 smears. The results were compared with the histological findings at cone biopsy which showed 117 carcinomas in situ, 30 microinvasive cancers, and 19 invasive carcinomas. There were statistically significant differences in DNA content and distribution between the intraepithelial neoplasia and microinvasive or invasive carcinoma. We also found cytophotometric differences between exocervical and endocervical in situ carcinoma and invasive cancers. The DNA content of cells did not vary significantly with age. Exocervical carcinoma in situ to have aneuploid histograms while endocervical in situ carcinoma had a euploid distribution of DNA, cytophotometry can help in planning the limits or extent of a cone biopsy.

Key words: DNA - CIN - Diagnosis - Therapy

Introduction

Cervical intraepithelial neoplasia or cervical carcinoma in situ can be treated by cone biopsy, the laser beam, cryotherapy or electrocoagulation. Detailed histological study of cone biopsies showed the presence of microinvasion in 19% and frank invasion in 11.5% of patients thought to have carcinomas in situ. This makes a method of predicting the presence of unsuspected invasion important and also underlines the importance of cone biopsy as a diagnostic procedure.

* Supported by Deutsche Forschungsgemeinschaft (He 781)
Offprint requests to: Dr. R. E. Herzog (address see above)
Fig. 1

Fig. 2