

ABSTRACT

TITLE: COMPOUND FIXATIVES IN MICROWAVE ASSISTED TISSUE PROCESSING – A STEP TOWARDS FORMALIN FREE LABORATORY PRACTICE

BACKGROUND:

Quick and precise histological diagnosis is the need of the hour especially in neoplastic diseases so as to improve diagnostic-therapeutic pathways. Formalin fixed paraffin embedded sections have been the bastion for histopathological diagnosis for decades, at the cost of exposure to its toxicity. Minimal formalin containing compound fixatives are fast acquiring recognition in the fixation of histopathological specimens. Microwave processing is a technique employing internal heating of tissues resulting in swift and homogenous heating of tissues, relatively shorter processing time, and comparable sections, sometimes even superior to conventional tissue processing methods.

PURPOSE:

- To evaluate the fixation characteristics of a new (minimal formalin containing alcoholic) compound fixative using microwave.
- To diminish formalin exposure in those handling the histopathological specimens.
- To reduce processing time using microwave

MATERIALS AND METHODS:

Hundred specimens of varying tissue characteristics are fixed in formalin and new compound fixative and processed using microwave oven. Statistical analysis was done using descriptive analysis and correlation tests.

RESULTS:

The tissues fixed in new compound fixative presented with architectural, cytoplasmic and nuclear features comparable to formalin with reduction in processing time from conventional 12 hours to one hour and forty five minutes.

CONCLUSION:

Microwave processing using minimal formalin containing compound fixative was found to be cost effective with reduced specimen turnaround times and sections comparable to formalin. It helps in the creation of a better laboratory environment owing to decreased formalin vapor density and enhanced air quality.

KEYWORDS:

Compound fixative, Microwaves, Formalin free laboratory.