

ABSTRACT

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Diploma thesis
Candidate: Bc. Martin Květoň
Branch of study: Specialist in Laboratory Methods
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Title: Screening for systemic amyloidoses in endoscopic biopsy samples

BACKGROUND

Systemic amyloidoses constitute a complex and heterogeneous group of serious diseases that result from protein misfolding and whose common feature is the deposition of pathological protein substances (amyloid) in the extracellular space of tissues. Diagnostics of amyloidoses is based on histopathological examination of tissue samples and direct demonstration of the presence of amyloid deposits. The overall purpose of this diploma thesis was to create, apply and subsequently evaluate a screening program focused on systemic amyloidoses.

METHODS

In the first part of the experimental study, available staining techniques used for the detection of amyloid deposits in the tissue were compared. The second part of the experimental study consisted of performing screening examinations on endoscopic biopsy samples of the gastrointestinal tract.

RESULTS

Based on the results of comparison, a method employing the Sirius red F3B dye was chosen as a suitable screening technique. Within the screening program, a total of 4285 samples from 2572 patients were histopathologically examined. In a total of ten samples from five patients, amyloid deposits were found, and typing of amyloidosis was performed in four patients.

CONCLUSIONS

The aims set at the beginning of this thesis have been met. An up-to-date summary of basic information on systemic amyloidoses has been assembled from available literature. Among histopathological techniques has been experimentally selected the one that is most suitable for screening use, followed by the examination of a total of 4285 samples from 2572 patients. In addition, the results have been clinically relevant to the screened patients, since they enabled an appropriate therapy to be initiated.

KEYWORDS: Systemic amyloidoses, Amyloid, Screening, Sirius red F3B, Histopathology