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CLINICAL IMPLICATION OF THE  
CHICAGO CLASSIFICATION FOR  
ACHALASIA

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## Thesis abstract

### 1.1 Introduction

Knowledge and treatment of achalasia has evolved significantly. The Chicago classification system has seen widespread introduction, claiming clinical relevance. We aim to:

- 1) Provide a review of the literature relevant to surgeons,
- 2) Define the incidence of achalasia in South Australia,
- 3) Assess the utility of the Chicago classification in predicting outcome after treatment
- 4) Describe the clinical presentation of type III achalasia

### 1.2 Methods

- 1) Literature review focusing on areas of relevance to surgeons
- 2) Achalasia diagnoses in South Australia were identified from motility laboratory databases. Incidence and age-standardised incidences were calculated using population data from the Australian Bureau of Statistics.
- 3) Patients were identified from a database of patients treated with cardiomyotomy. Manometry tracings were re-reported to determine subtypes. Outcomes were assessed by annual questionnaires and analysed using a mixed effects logistics regression model.

Patients undergoing pneumatic dilatation for achalasia were identified retrospectively. Outcome was assessed by review of records and questionnaire, analysis with a multivariate logistic GEE model.

- 4) Patients with type III achalasia, type II achalasia and distal oesophageal spasm were identified from endoscopy suite records and surgical database. Clinical information was retrieved from case notes and database records. Groups were compared regarding clinical presentation.

### 1.3 Results

The incidence of achalasia in South Australia was 2.3 to 2.8 per 100,000 pa. Mean age at diagnosis was  $62.1 \pm 18.1$  (SD) years. Incidence increased with age (Spearman rho = 0.95,  $P < 0.01$ ). Age-standardised incidence was 2.1 (CI 1.8 – 2.3) to 2.5 (CI 2.2 – 2.7).

195 cardiomyotomy patients were subtyped (type I n=60; type II n= 111, type III n=24); 176 returned questionnaires. Type III was less likely to have a successful outcome (type II vs. type III Odds ratio (OR) 0.38, 95% confidence interval (CI) 0.15-0.94,  $p$  0.035). There was no difference in outcome between types I and II.

Pneumatic dilatation cohort was 42 patients (62 dilatations). Chicago subtype was not predictive of outcome.

Type III achalasia has a similar clinical presentation to type II. It presents in an older age group (63yo vs 52yo type III v type II, mean,  $p= 0.006$ ). Patients had symptoms for a mean of 4.5 years prior to diagnosis compared with 2.5 years (type II achalasia).

### 1.4 Conclusions

Treatment of achalasia with laparoscopic cardiomyotomy is the gold standard. Type III achalasia may not response as well to standard treatment. POEM shows promise, especially for treating type III achalasia but has high rates of post-procedure reflux.

In the South Australian population, the incidence of achalasia is approximately double that previously described.

Type III achalasia is a predictor of treatment failure after cardiomyotomy. Chicago classification did not predict difference in outcome between types I and II achalasia.

In a small cohort of patients undergoing pneumatic dilatation the Chicago classification is not predictive of outcome.

Type III achalasia presents similarly to type II achalasia, suggesting symptoms are predominantly caused by lower oesophageal sphincter obstruction rather than oesophageal spasm. An older age of presentation raises the possibility of a different underlying pathophysiology.

## Thesis declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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**Date:** 10/10/2016

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