

Mortality of patients with non-functioning pituitary macroadenoma is significantly elevated: systematic analysis of 546 cases in a tertiary referral centre in the UK

Georgia Ntali¹, Cristina Capatina¹, Violet Fazal-Sanderson¹, James V Byrne², Simon Cudlip³, John AH Wass¹, Ashley B Grossman¹, Niki Karavitaki¹

¹Department of Endocrinology, Oxford Centre for Diabetes, Endocrinology and Metabolism, Churchill Hospital, Oxford, UK; ²Department of Neuroradiology, John Radcliffe Hospital, Oxford, UK; ³Department of Neurosurgery, John Radcliffe Hospital, Oxford, UK

Introduction

Data on the mortality of patients with non-functioning pituitary macroadenoma (NFA) are limited.

Aim

To assess the mortality of patients with NFA and predictive factors.

Patients and Methods

All patients presenting to our Department with NFA between 1963-2011 were studied. Status was recorded as either dead or alive, as of 31 December 2011.

Data on mortality

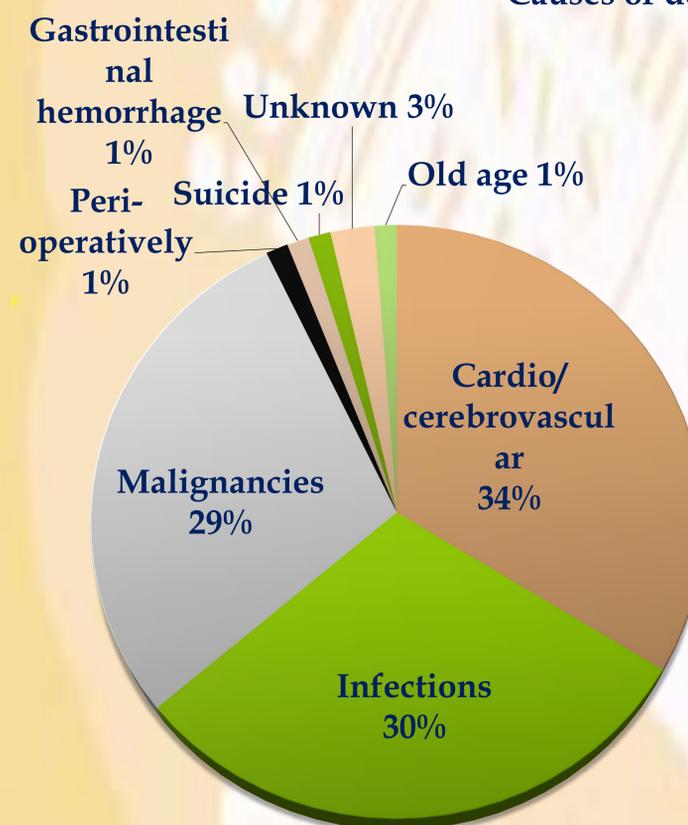
Patients (n)	Males (n)	Median age at surgery (years) (range)	Median time between surgery and known survival status (years) (range)	Number of deaths	Median age of death (years) (range)
546	333	58.7 (16.1-94.2)	8 (1 month-48.5 years)	83	77.8 (36.4-98.3)

Results

SMR for the total group	3.62 (95%CI:2.90-4.47; $p < 0.001$)
SMR for those diagnosed before 1990	4.66 (95%CI:2.65-7.63; $p < 0.001$)
SMR for those diagnosed after 1990	3.53 (95%CI:2.77-4.44; $p < 0.001$)

Clinical follow-up data (until date of death or date the database was frozen)	
Number of patients	436 (269 males)
Median age at surgery (years)	58.5 (16.11-94.19)
Number of patients with no or intrasellar remnant after surgery	203/431
Number of patients with extrasellar remnant after surgery	228/431
Median follow-up	6.9 years (1 month-48.5 years)
Number of patients with NFA regrowth	111/436
Number of patients who received radiotherapy (adjuvant or for regrowth)	188/436

Causes of death in NFA patients



Cox regression analysis (univariate followed by multivariate approach) demonstrated that amongst: age at surgery, NFA regrowth, radiotherapy, sex, extent of removal, untreated GH deficiency, untreated FSH/LH deficiency, ACTH deficiency, TSH deficiency and treatment with DDAVP, ONLY AGE remained an independent significant factor
(HR 1.099, 95%CI:1.073-1.126; $p < 0.001$)

Conclusions

This is the first study assessing systematically mortality in a large series of non-selected patients with NFA in the UK. Despite the improvement in the last three decades, mortality remains high.

Apart from age, factors related with the management/outcome of the tumour are not independent predictors and pituitary hormone deficits managed with the currently-used substitution protocols do not adversely affect mortality in this group of patients.