Reduced mortality due to malignant neoplasms in patients receiving long-term GH replacement therapy - A Swedish study based on more than 4 000 patient-years.

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Background
Hypopituitarism in adults is associated with an excess mortality.

Untreated growth hormone (GH) deficiency has been suggested as one of the causes for the excess mortality in patients with hypopituitarism. Although, there are still safety concerns regarding the potential risk of malignant neoplasms.

Purpose
To study the mortality in adult patients with hypopituitarism caused by non-functioning pituitary adenoma (NFPA) on long-term GH replacement therapy (GHRT) or not.

Summary
In this study, the mortality in NFPA patients was not increased compared to the general population.

The mortality in NFPA patients receiving GHRT was reduced in comparison to non-GHRT patients despite a higher frequency of ACTH deficiency indicating a more severe disease.

Mortality due to malignant neoplasms was reduced in patients receiving GHRT.

Conclusion
GH replacement therapy in patients with NFPA was associated with a reduced overall mortality and with a reduced mortality due to malignant neoplasms.

Method
NFPA patients within the Sahlgrenska University Hospital’s catchment-area (1.6 million inhabitants) were identified in the Swedish National Patient Registry between 1987-2011. All records of the identified NFPA patient were reviewed (Table 1).

All patients were cross-referenced with the Swedish National Death Registry.

Standardized mortality ratios (SMRs) with 95% confidence intervals (reference: Swedish population) and cox-regression analyses were used to analyse factors influencing mortality.

Results
The SMR was not significantly different from the Swedish population in the whole group of patients with NFPA whereas it was lower than expected for the GHRT-group and as expected for the non-GHRT-group. (Table 2)

Death due to malignant neoplasms was decreased in the GHRT-group and as expected in the non-GHRT-group. (Table 3)

Cox-regression analyses (Fig 2) identified GHRT (p=0.01) and age at diagnosis (p<0.001) as factors that significantly influenced the mortality. Gender did not influence the outcome (p=0.27).

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