Morbidity and Mortality in Cushing’s Syndrome

Role of Hypercortisolism in Cushing’s syndrome

The most common cause of Cushing’s syndrome is an ACTH-secreting pituitary adenoma (ie, Cushing’s disease), which promotes excess cortisol production from the adrenal glands. Underlying cortisol production remains unaffected if only symptoms are treated.

Effect on Cushing’s syndrome comorbidities:

The multisystem effects of cortisol excess translate into increased risk for several comorbidities in Cushing’s syndrome patients because increased cortisol levels are known to affect:

- Heart function
- Arterial-wall stiffness
- The immune system
- The coagulation system
- Glucose-homeostasis
- Bone formation

Multisystem Effects of Hypercortisolism:

Hypercortisolism exerts harmful effects such as:

- Insulin resistance
- Bone loss
- Hypertension
- Hypercoagulability
- Immunosuppression

Timely diagnosis and intervention, along with ongoing monitoring of cortisol levels, may reduce morbidity and mortality.
A population-based cohort study found that Cushing’s syndrome is associated with increased mortality and multisystem morbidity*

### Increased Risks for Patients with Cushing’s syndrome

This study measured the hazard ratio (HR) of several serious health risks, denoting the probability of the event occurring among the Cushing’s syndrome population as a ratio compared to the control cohort population. Hazard ratios were obtained with a 95% confidence interval (CI).

**Cardiovascular Events:**

- **2x HR**
  - Stroke

- **3.7x HR**
  - Acute myocardial infarction (AMI)

- **2.6x HR**
  - Venous thromboembolism (VTE)

**Peptic ulcers**

- **2x HR**

**Fractures**

- **1.4x HR**

**Infections**

- **4.9x HR**

**Mortality**

- **17.9/1,000 person-years**
  - in Cushing’s syndrome population vs. 9.5/1000 person-years in control cohort population

### Notes

- The multisystem risk of Cushing’s syndrome is already elevated during the 3 years before diagnosis.
- The cardiovascular consequences of Cushing’s syndrome and long-term increased risk for AMI underscores the need for adequate monitoring and risk factor management.

*Based on “Multisystem Morbidity and Mortality in Cushing’s Syndrome: A Cohort Study” by Dekkers, O., et al., published in Journal of Clinical Endocrinology Metabolism in June 2013*