

TEN PAPERS ON POST-TRAUMATIC HYPOPITUITARISM

These are listed in chronological order.

1. Anterior Pituitary Dysfunction in Survivors of Traumatic Brain Injury, Agha A, Rogers B, Sherlock M, *J Clin Endocrinol Metab*, 2004.

102 consecutive survivors of mod/severe TBI at a median of 17 months (range 6-36) post event. 28.4% of these had at least one anterior pituitary hormone deficiency.
<http://jcem.endojournals.org/cgi/content/abstract/89/10/4929>

2. Residual Pituitary Function after Brain Injury-Induced Hypopituitarism: A Prospective 12-month Study, Aimaretti G et al, *J Clinical Endocrinology & Metabolism* 2005

70 TBI patients, 32 SAH patients tested at 3 months and 12 months post-event. At 3 months, 32.8% had hypopituitarism At 12 months only 22.7% had it – however, although in some cases hypopituitarism had disappeared at 12 months, in others, though rarely, new deficits had appeared.
<http://jcem.endojournals.org/cgi/reprint/90/11/6085.pdf>

3. Hypopituitarism following traumatic brain injury, Popovic V, Aimaretti G et al, *Growth Horm IGF Res* 2005

A review: claims hypopituitarism and in particular growth hormone deficiency is common among TBI survivors tested “several months or years following head trauma”. . . “the subjects at risk are those who have suffered moderate-to-severe head trauma although mild intensity trauma may precede hypopituitarism also. Particular attention should be paid to this problem in children and adolescents. Onset of pituitary deficits can evolve over years following injury. For the assessment of the GH-IGF axis in TBI patients, plasma IGF-I concentrations, plus dynamic GH testing is indicated. Some degree of hypopituitarism is found in 35-40% of TBI patients.
<http://www.ncbi.nlm.nih.gov/pubmed/15935980>

4. High risk of Hypopituitarism after Traumatic Brain Injury: A Prospective Investigation of Anterior Pituitary Function in the Acute Phase and 12 Months after Trauma, Tanriverdi F et al, *J Clinical Endocrinology & Metabolism*, 2005

52 TBI patients. Pit function evaluated within 24 h of admission and after 1 year. **Results:** Some 5.8% of the patients had TSH deficiency, 41.6% had gonadotropin deficiency, 9.8% had ACTH deficiency, and 20.4% had GH deficiency (GHD). Twelve months after TBI, 5.8% had TSH deficiency, 7.7% had gonadotropin deficiency, 19.2% had ACTH deficiency, and 37.7% had GHD. Twenty-six patients (50.9%) had at least one anterior pituitary hormone deficiency, 21 patients (41.2%) had isolated hormone deficiencies, and five patients (9.7%) had combined hormone deficiencies. Overall, the pituitary hormone deficiencies recovered in 30 (57.7%) patients after 1 yr, and new pituitary hormone deficiencies were present in 27 (51.9%) patients after 1 yr. **Conclusions:** GHD is the most common pituitary deficit 12 months after TBI, and 50.9% of the patients had at least one anterior pituitary hormone deficiency. Pituitary function may improve or worsen in a considerable number of patients over 12 months.
<http://jcem.endojournals.org/cgi/content/full/91/6/2105>

5. Prevalence of anterior pituitary insufficiency 3 and 12 months after traumatic brain injury, Schneider H J, et al, *European Journal of endocrinology / European Federation of Endocrine Societies*, 2006

78 patients tested at 3 and 12 months after TBI. At 3 months, 56% had hypopituitarism, after 12 months 36% were affected but in some cases new impairments occurred. *Conclusions:* Hypopituitarism occurs often in the post-acute phase after TBI and may normalize later, but may also develop after the post-acute phase of TBI.

<http://www.eje-online.org/cgi/content/abstract/154/2/259>

6. Hypopituitarism following traumatic brain injury (TBI) Agha A, Phillips J, Thompson C H *British Journal of Neurosurgery* 2007

A review: "Recently several studies have shown that hypopituitarism is a common complication of head trauma with a prevalence of at least 25% among patients who were studied months or years following injury." Summarises available data i.e. 658 patients.

<http://www.ncbi.nlm.nih.gov/pubmed/17453791>

7. Acute and long-term pituitary insufficiency in traumatic brain injury: a prospective single-centre study, Klose M et al, *Clin Endocrinol (Oxf)*, 2007

46 consecutive TBI patients assessed within 12 days, then at 3, 6 and 12 months post-injury. In early stage 76% had hormone alterations, at 12 months 11%. This figure includes mild head injuries.

<http://www.ncbi.nlm.nih.gov/pubmed/17880406>

8. Hypothalamopituitary Dysfunction Following Traumatic Brain Injury and Aneurysmal Subarachnoid Hemorrhage: A Systematic Review, Schneider et al, *JAMA* 2007

Review of 19 studies covering 1137 patients. Pooled prevalence 27.5% for TBI, 47% for SAH.

<http://jama.ama-assn.org/cgi/content/full/298/12/1429>

9. Prevalence of predictive factors of post-traumatic hypopituitarism, Klose M et al, *Clin Endocrinol (Oxf)* 2008

<http://www.ncbi.nlm.nih.gov/pubmed/17524035>

A study of 104 survivors of mild, moderate and severe traumatic brain injury. 16% had pituitary dysfunction. This study is important because it is one of the few that include mild TBI.

10. Head-injury-induced pituitary dysfunction. An old curiosity rediscovered Acerini CL *Archives of Disease in Childhood* 2008

A review: "... studies variously report the prevalence of pituitary hormone deficiencies to be between 23% and 69%. It is clear from these studies that one or any number of hypothalamic-pituitary hormone axes may be impaired in the chronic phase following head injury, with the growth hormone, (GH; 10-33%), adrenal (5-23%) and gonadal axes (8-30%) apparently the most vulnerable to problems. Further clinical complexity is also evident from prospective, longitudinal observations, which suggest that for many head-injury survivors pituitary hormone dysfunction may not develop until at least 6 to 12 months after TBI, whereas, in others deficiencies can be transient and resolve spontaneously during the year after the trauma."

<http://adc.bmj.com/cgi/content/full/93/5/364>