diet and disease relationships. Biomarkers of dietary exposure should be valid, reproducible, able to detect changes in intake over time and be suitable for the general population. Yet many of the dietary biomarkers reviewed appeared inadequate at meeting all of the mentioned criteria. There are multiple factors that warrant investigation before many of these biomarkers can be more widely utilized in nutrition and health research. Genetics, age, type of specimen, time of year, and confounding dietary sources play a pivotal role in the feasibility and validity of dietary biomarkers. Future research should be directed at refining existing biomarkers by accounting for confounding factors, establishing new indicators of specific food intake and developing techniques that are cost-effective, noninvasive, rapid and accurate measures of nutritional status.

**D-22 PITUITARY BIOMARKERS IN HEALTH AND IN PITUITARY DISEASES**

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The pituitary gland produces and secretes hormones those play fundamental roles in regulating endocrine function. The pituitary gland has two lobes; an anterior and a posterior lobe. Adrenocorticotropic hormone (ACTH), growth hormone (GH), thyroid-stimulating hormone (TSH), luteinizing hormone (LH), follicular-stimulating hormone (FSH) and prolactin (PRL) are secreted from the anterior lobe. Posterior pituitary releases antidiuretic hormone (ADH)/vasopressin and oxytocin, which are synthesized by the neurosecretory cells in the hypothalamus and stored in the posterior pituitary. ACTH stimulates synthesis and secretion of glucocorticoids, mineralocorticoids and androgens from the adrenal cortex. The most important secretagogue of ACTH is corticotrophin releasing hormone (CRH). Physical, emotional and chemical stresses stimulate ACTH secretion. GH has a pulsatile secretion pattern along with the CRH. It has a diurnal rhythm. Hypersecretion of ACTH results in Cushing Disorder and hyposecretion results in secondary adrenocortical insufficiency. GH synthesized and secreted by the somatotroph cells within the anterior lobe. Growth hormone releasing hormone (GHRH), ghrelin and somatostatin influence the secretion of GH. Primary function of GH is the promotion of linear growth. Growth-promoting effects are mediated mostly by insulin-like growth factor 1 (IGF-1), but it has direct effects too. GH deficiency results in dwarfism in children. In the adults GH deficiency results in several metabolic disturbances and osteoporosis. On the other hand gigantism or acromegaly develops with GH excess. The hypothalamic control of PRL secretion is mainly inhibitory. Dopamine is the major inhibitory factor. The major function of PRL is stimulating lactation in the postpartum period. Hyperprolactinemia in adults results in hypogonadism. Absence of the lactation is the major consequence of hyperprolactinemia. TSH secretions is controlled by TRH (stimulates) and somatostatin (inhibits). Thyroid hormones control secretion by negative feedback. TSH deficiency causes central hypothyroidism and with TSH excess inappropriate TSH secretion results in thyrotoxicosis. LH and FSH regulates sex steroid secretion and gametogenesis. Deficiency of gonadotropins results in hypogonadism in both sexes. Excess gonadotropin secretion causes hypogonadism, ovarian hyperstimulation or testicular enlargement. Pituitary hormones should be evaluated along with the target gland hormones. Pulsaile secretion and short plasma half lives deserve attention while interpreting the results. For the evaluation of pituitary disorders dynamic tests are needed along with the basal hormone levels.

**D-23 LABORATORY POINT OF VIEW IN PITUITARY / ADRENAL AND GONADAL DISEASES**

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Hormones are organic compounds secreted into the bloodstream by specific glands, which modulate the functions of the tissues and specific organs that they reach via blood and act in very low quantities. It is derived from the Latin word ‘hormaein’, to stimulate, to act. The tissues in which they function are called target tissue. Some hormones may not be released from a specific gland or may have local effects instead of secretion into blood. Endocrinology is the study of medicine that relates to the endocrine system. The production and release of hormones into the blood are regulated by hierarchical control mechanisms. The majority of the hormones are released into the bloodstream by the effect of control mechanisms moving from top to bottom. The top step of these control mechanisms is the hypothalamus located at the base of the brain. With different neural stimuli reaching the cholestatic region, this region leads to the release of very small amounts of specific hormones, which we call releasing-releasing (sometimes slowing-inhibiting) factors. These hormones reach the anterior lobe of the 'hypophysis', a small endocrine gland located in the bone space called Sella Turcica that placed in the middle region of the brain via nerve fibers. Each secretory factor secreted by the hypothalamus leads to the release of a specific hormone from the anterior pituitary gland. The hormones released from the pituitary gland reach to the target tissues and glands via bloodstream and perform their specific functions. These functions are often as to stimulate the target gland for the production and release of its own hormones. Some hormones are not subject to this hierarchical system or are very little dependent. There are different stimulating and inhibiting mechanisms that regulate the synthesis and release of these hormones such as insulin, epinephrine, and glucagon.

**D-24 NOT A MYTH, BUT A DISEASE WE IGNORE; PORPHYRIAS**

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Porphyrias are a group of rare metabolic disorders characterized by the lack of enzymes involved in the synthesis of 'haem' and the excessive accumulation of haem precursors before the defective step. Diagnosis is usually delayed or it is likely that porphyria is often not considered at all as a cause of the patient’s symptoms and relevant patients may thus not be tested for these disorders. The presence of different clinical types, and the emergence and variation of symptoms relevant to many different medical specialties complicate the accurate diagnosis. The fact that the number of patients diagnosed with porphyria in our country is very low compared to Europe is probably due to the limited awareness of the physicians about the disorder and the lack of sufficient specialized laboratories to diagnose porphyria. Currently, prevention of acute attacks is possible with preventive measures and treatments if the patient is accurately diagnosed, but unfortunately patient’s quality of life is very low because of the lack of accurate diagnosis in most cases. It is of great importance that the patients are diagnosed so that the screening of relatives and genetic counseling can be carried out especially in consanguineous marriages. European Porphyria Initiative (EPI), founded in 2001 to improve the quality of diagnosis and treatment of porphyria patients in Europe, has been active as Euporpyria Network (EPNET) since 2007. The organization, which has succeeded in creating an effective network of specialized porphyria centers within the European Union, includes porphyria centers of 21 countries working to develop a current consensus-based approach for management for the disease, patients and their families. Many European countries with much smaller population than Turkey, have reported EPNET a much higher number of patients diagnosed with porphyrias than Turkey which points out how our health system