

TEST 1

1

Only one of the conditions listed below is linked to **hyperosmia**. Which one?

- ☐ (a) some traumas of the brain.
- ☐ (b) the Parkinson's disease.
- ☐ (c) the cerebellar glioma.
- ☐ (d) some strokes.

2

The **five diagnostic criteria for the Horton's disease** have been established in 1990 by the American College of Rheumatology. Which one of the following statement is true?

The presence of three from these five criteria provides for

- ☐ (a) a sensitivity of 90 % and a specificity of 98 %.
- ☐ (b) a sensitivity of 75 % and a specificity of 92 %.
- ☐ (c) a sensitivity of 70 % and a specificity of 80 %.

for the presence of Horton's disease.

3

The scale **ABCD²** allows, on the basis of 5 prognostic factors, the calculation of the risk for stroke after a transient ischemic attack. In this way the scale **ABCD²** allows the stratification of the patients with TIA in groups according to the level of the risk for stroke.

These five prognostic factors are: age, blood pressure, clinical signs, duration of the symptoms and (choose the correct answer):

- ☐ (a) smoking.
- ☐ (b) diabetes mellitus.
- ☐ (c) dislipidaemia.
- ☐ (d) increase over the norm of the ultrasensitive CRP.

4

The **perimesencephalic subarachnoid haemorrhage** is being determined as the presence of blood in the perimesencephalic subarachnoid space and it represents a special type of subarachnoid bleeding.

The perimesencephalic subarachnoid haemorrhage (choose the correct answer)

- ☐ (a) is not linked to neurological complications, it does not require any treatment and its vital prognosis as well as its functional prognosis are excellent.
- ☐ (b) is an emergency neurological and neurosurgical condition, which has a high mortality rate and a high rate of residual morbidity.

5

The **capsule of the brain abscess** is not exactly the same all along its circumference: it is thinner on the place where the saturation of the brain parenchyma with oxygen is not optimal and this place is the zone between the terminal branches of the cortical arteries and the penetrating arteries.

The practical significance of this knowledge is the fact that the eventual tear of the brain abscess appears exactly on the place where its capsule is thinner and usually this is (choose the correct answer):

- ☐ (a) into the centre of the abscess.
- ☐ (b) the upper side of the abscess.
- ☐ (c) the lateral side of the abscess.
- ☐ (d) the medial side of the abscess.
- ☐ (e) the lower side of the abscess.

6

The **aquaporins** are proteins that have been discovered in 1992. They belong to the proteins that build the cell membranes in the region of their pores, so they are also a type of channel proteins and they allow the selective entry of the water into the cells. Nowadays there are 13 different types of aquaporins that are known in humans.

The antibody against **aquaporin 4 (AQP4)** plays a major role in the pathogenesis of which one of the following diseases:

- ☐ (a) multiple sclerosis.
- ☐ (b) Devic's disease (neuromyelitis optica).
- ☐ (c) Uhthoff's phenomenon.
- ☐ (d) limbic encephalitis.

7

The **Hakim's triad** consists of three elements:

- a movement disorder represented by a characteristic gait disorder,
- a micturition disorder (either urinary incontinence, or urgency or detrusor instability) and
- cognitive disorders (they appear late).

The Hakim's triad is typical of:

- ☐ (a) normal pressure hydrocephalus.
- ☐ (b) cerebellar tumour.
- ☐ (c) brainstem stroke.
- ☐ (d) hepatic encephalopathy.

The most frequent compression mononeuropathy is represented by:

- ☐ (a) the ulnar nerve entrapment at the elbow.
- ☐ (b) the carpal tunnel syndrome.
- ☐ (c) the common fibular nerve compression neuropathy at the fibular head.
- ☐ (d) the arcade of Frohse compression syndrome.

In case of **internal carotid artery stenosis in its extracranial course** one of the possibilities for the calculation of the degree of this stenosis is the application of **the rule of the ACC/ACI index**.

According to this rule, if the maximal systolic velocity in the common carotid artery on the side of the stenosis is 38 cm/s and if the maximal systolic velocity at the maximal stenosis of the internal carotid artery is 310 cm/s, then the degree of the stenosis is

- ☐ (a) 50 %.
- ☐ (b) 88 %.
- ☐ (c) 27 %.
- ☐ (d) 70 %.

The Foville's syndrome is one of the classical alternating syndromes of the brainstem that gives the following clinical picture:

On the level of the head there is a nuclear palsy of the facial nerve and of the abducens nerve, nystagmus and sensory disturbances in the trigeminal nerve territory; all these disorders are ipsilateral to the brainstem lesion;

On the level of the body there is disturbed temperature and sensory perception caudal to the neck and this disturbed perception is contralateral to the brainstem lesion.

The anatomic lesion in case of **Foville's syndrome** is situated in:

- ☐ (a) the dorsolateral medulla oblongata.
- ☐ (b) the dorsocaudal pons.
- ☐ (c) in the ventrocaudal pons.
- ☐ (d) in the ventral medulla oblongata.

The reflex arch of **the adductor muscles** is represented by the spinal nerves:

- ☐ (a) L2 and L3.
- ☐ (b) only L3.
- ☐ (c) L4 and L5.
- ☐ (d) L5 and S1.

12

The most frequent cause for fainting is

- ☐ (a) the epileptic seizure.
- ☐ (b) the cardiac conduction disorders.
- ☐ (c) the reflex syncope.
- ☐ (d) the psychogenic fainting.

13

The Mendelson's syndrome is being defined as

- ☐ (a) the acute distension of the colon without any organic reason.
- ☐ (b) the appearance of tears of the mucosa of the cardia in case of long-lasting repeated vomiting.
- ☐ (c) the inhalation of gastric liquid into the bronchial tree during anaesthesia.
- ☐ (d) the appearance of „electric“ discharges in the upper limbs and the trunk in case of flexion of the head.

14

The Creutzfeldt – Jakob disease (CJD) is a degenerative neurological disease that, at the present state of our medical knowledge, cannot be cured and it always ends lethally.

Which one of the following statements is not true?

The Creutzfeldt – Jakob disease has the following forms:

- ☐ (a) sporadic CJD (*sCJD*).
- ☐ (b) familial CJD (*fCJD*).
- ☐ (c) new variant CJD (*nvCJD*).
- ☐ (d) iatrogenic CJD.
- ☐ (e) chimeric CJD.

15

In the classical case the lacunar ischemic stroke is due to the occlusion of one of the penetrating brain arteries. The main contributing factors for the occlusion of the penetrating brain arteries are two and they are:

- ☐ (a) the arterial hypertension and the age.
- ☐ (b) the age and the tobacco smoking.
- ☐ (c) the diabetes mellitus and the atrial fibrillation.
- ☐ (d) the arterial hypertension and the diabetes mellitus.

16

The most frequent tremor is

- ☐ (a) the Parkinsonian tremor.
- ☐ (b) the intention tremor.
- ☐ (c) the essential tremor.
- ☐ (d) the psychogenic tremor.

17

In case of headache in a patient that we consult for the first time as well as in case of a known patient with a newly appeared headache after the medical history and the clinical examination we should first ...

- ☐ (a) ask for a scanner or an MRI of the head.
- ☐ (b) ask for an advice on the part of another neurologist.
- ☐ (c) take the patient's blood pressure on both arm.
- ☐ (d) ask for the determination of the erythrocyte sedimentation rate.

18

Nowadays **the migraine** is subdivided into how many subtypes?

- ☐ (a) into 3.
- ☐ (b) this has not been determined.
- ☐ (c) into 6.
- ☐ (d) into 7.

19

The Seddon classification and the Sunderland classification are two classifications concerning

- ☐ (a) the degrees of traumatic lesions of the central nervous system.
- ☐ (b) the degrees of traumatic lesions of the peripheral nervous system.
- ☐ (c) the different types of epilepsy.
- ☐ (d) the different inborn lesions of the peripheral nervous system.

20

The vertebroplasty and the kyphoplasty are two interventional methods for the treatment of (a part of) the vertebral compression fractures. The main difference in the realization of these two methods is that

- ☐ (a) the kyphoplasty reduces the pains whereas the vertebroplasty does not so.
- ☐ (b) the kyphoplasty is related to a risk for leak of bone cement out of the vertebral body whereas this risk does not exist in case of vertebroplasty.
- ☐ (c) the kyphoplasty has been invented earlier than the vertebroplasty.
- ☐ (d) in case of kyphoplasty before the injection of the bone cement the body of the compressed vertebra is being expanded to its normal size.

21

Which one is the correct answer?

The cauda equina is composed of which ones out of the following spinal nerve pairs:

- ☐ (a) L2, L3, L4, L5, S1, S2, S3, S4, S5 and Co1.
- ☐ (b) L5, S1, S2, S3, S4, S5 and Co1.
- ☐ (c) S2, S3, S4, S5 and Co1.
- ☐ (d) S4, ES5 and Co1.

The Garin – Bujadoux – Bannwarth syndrome is one of the clinical expressions of

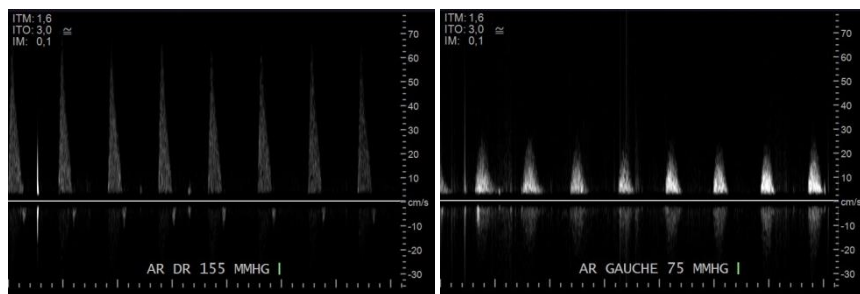
- ☐ (a) the Lyme disease.
- ☐ (b) the Guillain – Barré syndrome.
- ☐ (c) the infectious parotiditis.
- ☐ (d) the traumatic injury of the facial nerve.

Which one of the statements – **a1** or **a2** – in the definition of **the syndrome of inappropriate antidiuretic hormone secretion** is true?

The syndrome of inappropriate antidiuretic hormone secretion is being defined as

- ☐ (**a1**) the presence of hyponatremia (sodium < 135 mmol/l) because of plasma dilution that is accompanied by
or
 - ☐ (**a2**) the presence of hypernatremia (sodium > 146 mmol/l) because of plasma concentration that is accompanied by
- reduced serum osmolality (< 270 mosm/l),
 - with the urine osmolality higher than serum osmolality and
 - in the absence of œdema or ascites.

After having taken our new patient's medical history we proceed to his clinical examination and, as it is obligatory for every new patient, we **take the blood pressure on his both arms**. Here is the result from this measurement, illustrated with the result from the ultrasound examination of the blood flow in his right and left radial arteries:



The maximal systolic blood pressure value on the right arm is 155 mmHg whereas on the left arm this value is 75 mmHg.

Please, pay attention to the difference into the form of the ultrasound signal in both graphics, i.e. to the difference into the form of the ultrasound signal from the right and from the left radial arteries.

About what should we think on first place?

- ☐ (a) incorrect blood pressure measurement.
- ☐ (b) normal result from the blood pressure measurement.
- ☐ (c) acquired atheromatous stenosis in the proximal segment of the left subclavian artery with a highly likely presence of the subclavian steal syndrome on the left.
- ☐ (d) inborn atheromatous stenosis in the proximal segment of the left subclavian artery as an accidental finding during the clinical examination.

Which one from the following statements about the transient global amnesia **is not true**?

The transient global amnesia is a suffering of the central nervous system in which

- ☐ (a) there is a temporary and almost always complete loss of the short-term memory.
- ☐ (b) the long-term memory is not affected at all or, if affected, then it is affected only to a very mild degree.
- ☐ (c) the other cognitive functions are preserved.
- ☐ (d) the level of consciousness is reduced.

TEST 1 [ANSWERS]

1

The correct answer is (c).

The cerebellar glioma is linked to hyperosmia. The increase of the sense of smell (hyperosmia) is a rare condition, while the reduction of the sense of smell (hyposmia) and its complete loss (anosmia) are frequently observed and in all other three conditions it is possible to have a reduction or a complete loss of the sense of smell.

More about the gliomata – in our documents 057 and 123.

2

The correct answer is (b).

The presence of three of the diagnostic criteria for the Horton's disease provides for a sensitivity of 75 % and a specificity of 92 % for the presence of this disease.

More about the five diagnostic criteria for the Horton's disease as well as for the Horton's disease itself – in our documents 051 and 115.

3

The correct answer is (b).

The other options are represented by modifiable cardio-vascular risk factors that are not taken into account by the scale **ABCD²**.

More about the scale **ABCD²** can be learned in our document 004.

4

The correct answer is (a).

Our documents 010 and 106 describe two completely different cases of subarachnoid haemorrhage followed by a vast discussion of different practical and theoretical aspects of this disease.

5

The correct answer is (d).

The consequence of this fact is that in most cases the brain abscess rupture leads to acute ventriculitis what, on its turn, leads to a significant deterioration of the patient's clinical state.

Our document 114 describes a typical otogenic brain abscess and in its theoretical part it allows a discussion of the brain abscesses starting with their definition up to the different kinds of treatment and the final issue of medical care for them.

6

The correct answer is **(b)**.

A lot can be learned about the Devic's disease in our document 118, about the multiple sclerosis in our documents 104 and 117 and about Uhthoff's syndrome in our document 034.

7

The correct answer is **(a)**.

On clinical level the normal pressure hydrocephalus not always presents in its complete form – quite frequently it is possible to observe forms with two or even with only one out of these three elements.

Our document 064 describes a typical case of normal pressure hydrocephalus that is being discussed both from the clinical and from the theoretical points of view.

8

The correct answer is **(b)**.

The second most common compression mononeuropathy is the ulnar nerve entrapment at the elbow, followed by the peroneal neuropathy at the fibular head and the least frequent of these four syndromes is the arcade of Frohse radial nerve entrapment syndrome.

The classical clinical picture of the carpal tunnel syndrome is presented in our document 040 while in our document 063 we have presented extreme cases of the carpal tunnel syndrome, i.e. very early and very advanced forms of the carpal tunnel syndrome.

9

The correct answer is **(b)**.

The rule of the **ACC/ACI index** is:

$$\text{Percentage of the stenosis} = \frac{(1 - \text{maximal systolic velocity in the common carotid artery} / \text{maximal systolic velocity in the internal carotid artery}) \times 100 \%}{100 \%}$$

In our case the maximal velocity in the common carotid artery is 38 cm/s, and in the internal carotid artery it is 310 cm/s, so our formula is

$$\text{Percentage of the stenosis} = (1 - 38/310) \times 100 \% = (1 - 0.11875) \times 100 \% = 0.88 \times 100 \% = 88 \%$$

Our documents 008, 015, 096 and 125 present cases of stenosis of the internal carotid artery in its extracranial segment and all these clinical cases are followed by useful theoretical materials.

10

The correct answer is **(b)**.

The answer (a) concerns the Wallenberg's syndrome, the answer (c) concerns the Millard – Gubler's syndrome and the answer (d) concerns the Weber's syndrome.

Our document 048 presents a clinical case of alternating syndrome of vascular origin and after that the main alternating syndromes are presented in the following theoretical section.

11

The correct answer is **(a)**.

The adductor reflex is not so well known, so it is used relatively seldom in the clinical practice but this should not be so.

Our document 084 presents the clinical case of a left L3 spinal nerve lesion due to a discal hernia and in the following theoretical section we discuss the zone of sensory innervation of the spinal nerve L3, all the muscles that it innervates, including its key muscles and we also discuss the adductor reflex.

12

The correct answer is **(c)**.

Our document 102 presents a clinical case of reflex syncope both from the clinical as well as from the theoretical points of view.

13

The correct answer is **(c)**.

The answer (a) describes the Ogilvie syndrome, the answer (b) describes the Mallory – Weiss syndrome and the answer (d) describes the Lhermitte's syndrome.

Our document 014 presents the clinical case of a pulmonary inflammation after inhalation in a patient with spontaneous brain haemorrhage and in its theoretical section there is a vast discussion of this problem.

14

The correct answer is **(e)**.

Our document 124 presents the clinical case of a sporadic form of the Creutzfeldt – Jakob disease followed by a theoretical discussion of this disease.

15

The correct answer is **(d)**.

Our documents 007 and 126 present the lacunar ischemic strokes from clinical and theoretical points of view.

16

The correct answer is (c).

Our document 013 gives the opportunity to study two clinical cases of essential tremor that are followed by a detailed discussion of this disease.

17

The correct answer is (c).

After the anamnesis and the neurological examination the simplest and, in the same time, the most useful paraclinical examination is **taking the patient's blood pressure on both his / her arm**. This is so because of the fact that one of the most frequent reasons for consultation because of headache is the undiagnosed arterial hypertension.

The brain / head imaging studies should also be done but already as a second step in the diagnostic care for a headache; the advice on the part of another neurologist is also an option but usually we do so in case we could not determine the reason for the headache after carrying out all relevant paraclinical studies; the study of the erythrocyte sedimentation rate is indicated mostly if there is an anamnestic and clinical suspicion of giant cell arteritis (Horton's disease).

Our document 053 presents such a clinical case of headache because of an undiagnosed arterial hypertension both from clinical as well as from theoretical points of view.

18

The correct answer is (c).

Our documents 071, 072 и 073 present three clinical cases of migraine (common migraine, classical migraine and familial hemiplegic migraine) and they are accompanied by the corresponding volume of additional practical and theoretical knowledge in their sections „In order to know more“.

19

The correct answer is (b).

Our document 080 presents a clinical case of lesion of the right radial nerve that is being followed by the Seddon classification and the Sunderland classification.

20

The correct answer is (d).

Our document 021 presents a case of treatment of a vertebral compression fracture by kyphoplasty and the result of this treatment is not only well illustrated but a lot can be learned about both these methods from the following theoretical discussion.

21

The correct answer is (a).

Our document 088 presents two clinical cases of the cauda equina syndrome of mechanical origin that are followed by a thorough discussion of this anatomical structure and of the cauda equina syndrome.

22

The correct answer is **(a)**.

Our document 079 presents a clinical case of nervous system suffering in case of Lyme disease and in its section „In order to know more“ one of the discussed topics is the Garin – Bujadoux – Bannwarth syndrome.

23

The correct answer is **(a1)**.

Our document 016 presents the clinical case of a paraneoplastic syndrome of inappropriate antidiuretic hormone secretion that is followed by a complete presentation of this pathological entity.

24

The correct answer is **(c)**.

Our documents 127, 128 and 129 present in detail the syndrome of the subclavian steal syndrome in its asymptomatic form as well as in its symptomatic form.

25

The correct answer is **(d)**.

In case of transient global amnesia the level of consciousness remains normal.

Our document 011 gives the opportunity to get to know a typical clinical case of transient global amnesia not only as clinical expression but also as detailed theoretical knowledge about it.