Archives of Cardiovascular Disease Supplements (2019) 11(3S), e333—e340

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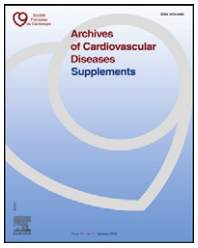

01—Clinic

Adrenergic surge and hypertensive crisis after weaning from neurosedation in children

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Pharmacological sedation in brain-injured patient is crucial to preserve intra-cerebral hemodynamic stability. Stopping sedation may be accompanied by a procession of clinical and psychic symptoms called withdrawal syndrome (WS) and secondary to an adrenergic discharge leading to tachycardia and possible relapse. We aimed to describe the incidence of these adrenergic surges and the evolution of the WS.

Methods Our retrospective study was carried out from April 2017 to March 2018 in the pediatric intensive care unit department of the 1st November University Hospital (61 patients included). Morphine derivatives and hypnotics (midazolam type) were used for sedation. Adrenergic discharge is defined by systolic-diastolic hypertension > 95th percentile in children, tachycardia, tachypnea, agitation.

Parameters sociodemographic status, nature of brain injury, duration of sedation, duration of ventilation, time delay to withdraw sedation, time delay of clinical manifestations after WS.

Results Fourteen patients (23%, 9 boys and 5 girls) evidenced a WS, mean age: 60.43 months-old. Children were admitted for isolated serious head injury ($n = 4$), severe meningitis ($n = 2$), cerebral aspergillosis ($n = 1$), postoperative brain tumors ($n = 7$). The morphine sedation duration was 6 ± 0.5 days; the duration of sedation with benzodiazepines was 7.1 ± 1.5 days. After the cessation of sedation, patients were ventilated ($n = 10$), 2 patients had an intubation probe and 2 had a tracheotomy. The peak of the adrenergic surge was observed 7.5 ± 2.25 hours after cessation of sedation; the averaged systolic blood pressure was 165 mm Hg and the averaged diastolic blood pressure 107 mm Hg; the heart rate was 105 beats/min. Two patients evidencing a state of extreme agitation requiring reintroduction of benzodiazepines for less than 24 hours. The average duration of hospitalization was 12.8 days $\pm$ 6.3 days [6—22 days]. One patient died in a context of relapse of intracranial hypertension and perilesional edema.

Conclusion Stopping sedation in a brain-damaged patient leads to an adrenergic surge that may be responsible for an extension of hospitalization time in an intensive care unit. The cessation of sedation would be provided by a rigorous withdrawal protocol.

Disclosure of interest The authors declare that they have no competing interest

https://doi.org/10.1016/j.acvdsp.2019.05.004

Difficulty of stroke management in the dialysis child

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Objectives We aimed to describe pediatric stroke in dialysis children and the difficulty of managing stroke during the dialysis session.

Methods Our retrospective study collected data from cerebral ischemic attacks (CIA), cerebral hemorrhage (CH) over a period of 3 years (2003—2016) among dialysis children. Patients were monitored during the dialysis session to monitor CF, SPIO2, blood pressure with a therapeutic blood pressure goal of 150/100 mm Hg.

Results Nine patients, 5 girls and 4 boys, average of 8 years old. Three patients had a neurological form of hemolytic uremic syndrome, 2 patients had a scleroderma crisis complicated by malignant hypertension, 2 dialysis patients with malignant nephroangiosclerosis received an anticoagulant overdose, 2 patients with poorly controlled hypertension had reflux nephropathy. Upon admission, arterial hypertension was found in all patients average systolic pressure: 175 mmHg [140—190] and diastolic pressure: 115 mmHg [95—120]. Neurological clinical syndromes as: headache, visual blur and ear buzz (3 cases), 1 patient with right hemiplegia had aphasia without disturbances of consciousness, and 1 had hemiplegia with deviation of the head to the left. The convulsions were observed in 3 patients, coma in 1 patient. Brain imaging revealed 5 cases of CIA

and 4 cases CH. In addition to treatment with extra-renal cleansing without heparinization, patients were treated by (captopril); and anticonvulsants.2 children died after (extensive brain hemorrhage) 1 month after the stroke. For one patient, a decrease in hemiparesis was observed with persistent facial asymmetry and a preferential grip on the right in another child.

Conclusion Cause or consequences of the renal disease, HT must be properly treated in order to reach the recommended targeted blood pressure values. The time required to take charge the hypertensive stroke determines the prognosis. The challenge is to optimize the health care sector to reduce mortality and sequelae.

Disclosure of interest The authors declare that they have no competing interest

https://doi.org/10.1016/j.acvdsp.2019.05.005

Evolution of hypertension and diabetes in elderly subjects

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Introduction Hypertension (HTA) is common in elderly diabetic patients, who are at risk of cardiovascular complications and accelerated degenerative disease. We aimed to determine the characteristics of hypertension and diabetes in the elderly.

Methods We collected all the records of elderly diabetic and hypertensive patients hospitalized at least once in our department of endocrinology-internal medicine from 2010 to 2018.

Results Fifty-nine patients were identified. The average age was 70.77 years (65—84 years). The sex ratio was 1.56 (F/H) with 36 women and 23 men. The seniority of diabetes was 8.18 years (1—30). The diagnosis of diabetes preceded that of hypertension in 16 cases (27.11%) with 67.79% of insulin treated patients and 32.21% received oral antidiabetic agents. Fifty-six percent of the patients had Grade I hypertension, 70% of whom were systolic with treatment with at least one bitherapy in 28 (47.45%); the most frequent combination was ACE (inhibitors conversion enzyme) and diuretics. Mean BMI was 32.93 kg/m^2 (24—50.44). The dyslipidemia was present in 34 patients (57,62%) with essentially a hyper-triglyceridemia (70%). Macroangiopathy was observed in 19 patients (32.2%) with mainly ischemic heart disease (30%) significantly more often in patients with $HbA_{1c} > 8.5\%$ and LDL > 1 g/L. Microangiopathy was present in 30 cases (50.84%) with diabetic retinopathy in 40.2% of patients and diabetic neuropathy in 21.4%. Regarding the non-degenerative complications of diabetes, this age group was mainly exposed to infectious complications with a clear predominance of urinary infection and non-necrotizing dermo-hypodermitis (8.47% of cases).

Conclusion Comprehensive management of cardiovascular risk factors in elderly patients is needed to improve the quality of life of these frail patients. On the other hand, poly-pathology and polypharmacy is a source of poor compliance and therefore unsatisfactory evolution.

Disclosure of interest The authors have not supplied their declaration of competing interest.

https://doi.org/10.1016/j.acvdsp.2019.05.006

Prediction of the therapeutic change score in hypertensive subjects by big data analysis and artificial intelligence

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The monitoring of hypertensives with a computerized medical file generates a quantity of data imposing the use of digital tools of Big data. The aim of this work was to describe a therapeutic change score (TCS) in hypertensives treated and followed in the long term in a specialized service in hypertension, and to develop a model for predicting the TCS.

Methods In 1,293 hypertensive patients followed for a median of 5.1 years, in a hospital consultation specialized in hypertension, 13 271 consultations were made. At each visit, the list of current antihypertensive treatments has been completed. Demographic data, medical history, clinical parameters with blood pressure measured in a standardized way with an electronic device by ''automatic measurement'' (SPRINT methodology) were obtained at each visit. The TCS was calculated at each visit with 0 in case of therapeutic stability and 1 in the case of change of at least one antihypertensive treatment or its dosage. Data has been anonymized and organized with the implementation of artificial intelligence tools (gradient tree boosting trees, neuronal network, Long Short Term Memory). A prediction model for the TCS has been developed and tested.

Results The cohort included subjects aged 60 years with 57% men with 3 or more visits completed for 46% of subjects. At the initial visit 9.5% of the patients were in secondary prevention. The incidence of cardiovascular complications was 3.4% per year. Kaplan-Meyer analysis indicated a positive CTS in 70% of the subjects in the first year and 98% in the total duration of follow-up. The prediction model for the CTS retained 160 variables. This model allows the prediction of a change in antihypertensive prescription at the next visit with a true positive value of 92% and a negative predictive value of 77%.

Conclusion It was possible to create an artificial intelligence model from a hypertensive patient database followed-up in a hypertension excellence center. This model predicts a change in antihypertensive prescription at the next visit with an accuracy of 92%. The most relevant variables can be selected to integrate an e-health application which will aim, in treated hypertensives, to optimize the date of the next consultation to the doctor in charge of the follow-up of hypertension.

Disclosure of interest The authors declare that they have no competing interest.

https://doi.org/10.1016/j.acvdsp.2019.05.007

Assessment of adherence to antihypertensive drugs in patients with resistant hypertension receiving optimal treatment

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Objective To estimate the proportion of non-adherence to antihypertensive drugs in patients with apparent resistant hypertension despite optimal medical treatment.