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Highlights



Risk factors control in atherosclerotic cardiovascular disease patients

In Taiwan, atherosclerotic cardiovascular disease (ASCVD) carries a high morbidity and mortality. Therefore, major risk factor control is of particular importance for patients with ASCVD to reduce recurrent cardiovascular events. In the clinical guidelines co-developed by the Taiwan Society of Cardiology, Taiwan Society of Lipids and Atherosclerosis, and Diabetes Association of Republic of China (Taiwan), Li et al.¹ assisted health care professionals in Taiwan about the control of hypertension, hypercholesterolemia and diabetes mellitus. The panel also highlighted the recommendations about blood pressure, cholesterol, and sugar control for ASCVD, with medications beneficial for ASCVD.

TWHF in diabetic nephropathy patients with overt proteinuria and normal eGFR

Xiong et al.² evaluated the efficacy and safety of Tripterygium Wilfordii Hook F (TWHF) in diabetic nephropathy (DN) patients with overt proteinuria and normal eGFR. A total of 124 DN patients were randomly assigned into two groups to receive either valsartan 160 mg/d treatment (control group) or TWHF 60 mg/d plus valsartan 160 mg/d treatments (TWHF group) for 24 weeks. The primary endpoint was a reduction in 24-h urine protein excretion between baseline and the end of study, the secondary endpoint was to observe the change in estimated glomerular filtration rate (eGFR) between two groups. After treatment, a more significant decrease in proteinuria was observed in patients who received TWHF treatment (from 4.95 ± 1.27 g/24 h to 3.36 ± 0.83 g/24 h) compared to valsartan monotherapy (from 5.21 ± 1.59 g/24 h to 4.52 ± 1.06 g/24 h). The percentage change in urine protein excretion was -32.12% in TWHF group and -13.24% in valsartan group. Patients' plasma albumin in TWHF group (from 32.53 ± 5.24 g/L to 36.91 ± 4.42 g/L) was higher than that in control group (from 33.18 ± 4.87 g/L to 34.67 ± 4.75 g/L). However, adverse events in TWHF group were higher than those in control group. In summary, TWHF

is more effective than valsartan monotherapy in reduction of proteinuria in DN patients with overt proteinuria and normal eGFR, but with more adverse effects.

Hereditary transthyretin amyloidosis with transthyretin Ala97Ser

The cardiac manifestations and prognostic factors of late-onset hereditary transthyretin amyloidosis with p.A97S variant remain to be clarified. To this end, Lai et al.³ retrospectively collected 67 patients with ATTR p.A97S to study their clinical profiles, echocardiography, and ECG findings. Of these patients, 82% met the criteria for left ventricular (LV) hypertrophy. Reduced global longitudinal strain (GLS) was noted in 42.1% of them, and 14% had a relative apical sparing pattern. A low voltage pattern in the ECG was observed in 31.3%, while 64.2% presented with a pseudoinfarction pattern. End-systolic LV inner dimension (HR: 2.25 (95% CI: 1.01–5.01), $p = 0.048$), reduced GLS (HR: 5.26 (1.08–25.0), $p = 0.039$), relative apical longitudinal strain (RALS >1 , HR: 8.57 (1.69–43.3), $p = 0.009$), increased E/A ratio (HR: 6.51 (1.17–36.4), $p = 0.033$), and increased QRS duration (HR: 1.02 (1.00–1.04), $p = 0.05$) were correlated with reduced survival in univariate analysis. Multivariate analysis revealed reduced RALS was significantly correlated with reduced survival (HR: 13.00 (1.81–93.45), $p = 0.011$). Thus, ATTR p.A97S is a cardiomyopathy as well as a polyneuropathic syndrome. Contemporary echocardiographic techniques are useful for identifying cardiac amyloidosis and providing prognostic information.

Computer-aided three-dimensional simulation and navigation in orthognathic surgery

In this study, Chang et al.⁴ assessed the accuracy and prediction of computer-aided three-dimensional simulation and navigation in orthognathic surgery (CASNOS) protocol in adult patients treated with 2-jaw orthognathic surgery. Adult patients with skeletal Class III malocclusions requiring 2-jaw orthognathic surgery were enrolled. Three-

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dimensional imaging data of 1-month pre-surgical (T1) and 6-month post-surgical (T2) CT were compared to assess accuracy of CASNOS planning. The accuracy of CASNOS protocol was evaluated by calculating the differences in the positions of selected landmarks between simulated surgical and post-surgical 3D images parameters, including ANB, A-Nv, Pog-Nv, and the positions of selected landmarks (ANS, Point A, Point B, Pog) changes in horizontal (x-axis) and vertical (y-axis) directions. Overall geographical discrepancy of planning was assessed by superimposing the color mapping of T1 and T2 imaging. A total of 30 adult patients with a mean age of 20.6 ± 1.5 years (female/male = 18/12) were enrolled. The geographical changes of overall superimposition between the planned and post-surgical imaging was 0.60 ± 0.19 mm (range: 0.42–1.08 mm). The discrepancies between simulated and post-surgical ANB, A-Nv, Pog-Nv were $1.16 \pm 0.36^\circ$, 1.25 ± 0.33 mm, 1.19 ± 0.35 mm, respectively. The deviations between simulated and post-surgical Point A and Point B positions were within 1 mm in horizontal and vertical directions. Therefore, the application of the pre-designed bony guiding splints of CASNOS protocol may allow surgeons to treat patients with craniofacial deformities more precisely.

Resistance-associated substitutions in Mongolian chronic hepatitis C patients with ledipasvir/sofosbuvir therapy

Hepatitis C virus (HCV) infection is a global health problem and Mongolia has the highest prevalence of anti-HCV in the world. Ledipasvir/sofosbuvir (LDV/SOF) was introduced to Mongolia since 2016 for HCV eradication. HCV resistance-associated substitutions (RASs) may affect the effectiveness of LDV/SOF in western chronic hepatitis C (CHC) patients. In this collaborative study, Hsu et al.⁵ investigated the effectiveness of LDV/SOF and the impact of RAS on the treatment outcome in Mongolian CHC patients. Patients with genotype (GT) 1b HCV infection were enrolled in Mongolia and treated with LDV/SOF for 12 weeks. The proportion of pre-treatment NS5A Y93H RAS in viral quasispecies was measured using next-generation sequencing. The endpoint of LDV/SOF effectiveness was sustained virological response at post-treatment week 12 (SVR12). A total of 94 CHC patients were evaluated. The baseline Y93H proportion was <1% in 74 patients, 1–15% in 7, 15–50% in 2, and $\geq 50\%$ in 11. All patients completed 12-week LDV/SOF treatment and the SVR rate was 90.4%. The rate of failure to achieve SVR12 for patients with Y93H < 1%, 1–15%, and $\geq 15\%$ were 0%, 14.3%, and 61.5%, respectively (p for trend = 0.001). Older age, baseline alanine transaminase level <40 U/mL, and a higher proportion of Y93H were associated with treatment failure in univariable analysis. In multivariable analysis, only a higher proportion of Y93H was associated with treatment failure ($p = 0.022$). In summary, LDV/SOF therapy achieves a high SVR rate in Mongolian CHC GT1b patients without baseline Y93H RAS. However, a higher proportion of Y93H may undermine the its effectiveness.

Laboratory features in atrophic glossitis patients with vitamin B12 deficiency

Wu et al.⁶ extended their previous observations to assess whether the AG patients with vitamin B12 deficiency (B12D/AG patients) had significantly higher frequencies of anemia, hematinic deficiencies, hyperhomocysteinemia, and serum gastric parietal cell antibody (GPCA) positivity than healthy controls. The blood hemoglobin (Hb) and serum iron, vitamin B12, folic acid, homocysteine, and GPCA levels in 56 B12D/AG patients and 532 healthy control subjects were measured and compared. The results showed that 56 B12D/AG patients had significantly lower mean blood Hb and serum iron levels as well as significantly higher mean corpuscular volume (MCV) and mean serum homocysteine level than healthy control subjects (all P -values < 0.05). Moreover, 56 B12D/AG patients had significantly higher frequencies of macrocytosis (53.6%), blood Hb (64.3%), iron (26.8%), and folic acid (3.6%) deficiencies, hyperhomocysteinemia (89.3%), and serum GPCA positivity (55.4%) than 532 healthy control subjects (all P -values < 0.005). In addition, of 36 anemic B12D/AG patients, 22 (61.1%) had pernicious anemia (PA), 6 (16.7%) had macrocytic anemia other than PA, 4 (11.1%) had normocytic anemia, 3 (8.3%) had iron deficiency anemia (IDA), and one (2.8%) had microcytic anemia other than IDA and thalassemia trait-induced anemia. In brief, B12D/AG patients have significantly higher frequencies of macrocytosis, blood Hb, iron, and folic acid deficiencies, hyperhomocysteinemia, and serum GPCA positivity than healthy control subjects.

Clinical implications of multiple glioblastomas

Glioblastoma (GBM) has a highest fatality rate among primary malignant brain tumors, whereas GBMs with synchronous multiple foci (multiple GBMs) is rare. Shieh et al.⁷ retrospectively compared the clinical characteristics between multiple and single GBMs and to identify factors associated with the survival of GBM and evaluate their effects. The primary endpoint was overall survival (OS), and the independent factors for survival were identified through Cox regressions. A total of 48 patients were identified, of whom 44 (92%) were GBM and 4 (8%) were gliosarcoma (GSM). Preoperative images showed 5 (10%) patients had multiple brain lesions. GSM showed a high ratio of multiple lesions (50%) than patients with GBM (5%) ($p = 0.05$). Those with multiple lesions had significantly worse median OS of 8.2 months compared to patients with a single lesion (16 months, $p = 0.03$). In addition, multiple GBMs was a predictor of worse survival (hazard ratio [HR] = 3.57, 95% confidence interval [95% CI]: 1.26–10.13) after adjustment for other significant predictor of radiotherapy (HR = 0.47, 95%CI: 0.23–0.96). In conclusion, patients with multiple GBMs have worse survival compared to those with single GBM. GBM without post-operative radiotherapy is also a predictor of worse survival.

Personality traits and psychosocial distresses among heroin or methamphetamine users

Substance use disorders (SUDs) are associated with borderline and antisocial personality disorders. Ma et al.⁸ investigated the associations between substance, personality and psychosocial distresses in 39 individuals with heroin use disorder (HUD), 111 with methamphetamine use disorder (MUD) and 101 as the control group in a rural area of Taiwan by using a cross-sectional, questionnaire-based study. The Tridimensional Personality Questionnaire (TPQ) and Opiate Treatment Index were used to assess the association between personality and psychosocial conditions. Deviations of the three personality dimensions of TPQ (novelty seeking, harm avoidance, and reward dependence) could reflect eight personality patterns. The data indicated that SUD was associated with high novelty seeking and harm avoidance traits and explosive (borderline) personality pattern, whereas HUD was also linked with sensitive (narcissistic) pattern. Subjects with HUD tended to have more deviant personality traits than subjects with MUD. For subjects with SUDs, all three personality dimensions and sensitive (narcissistic) personality patterns were associated with emotional and somatic distresses, and those with explosive (borderline) and sensitive (narcissistic) patterns had poor social functioning. Taken together, substance abusers with high novelty seeking and harm avoidance, corresponding to explosive (borderline) or sensitive (narcissistic) patterns, to have a higher tendency to suffer from somatic and psychosocial distresses.

Transfusion associated hepatitis C virus infection in Taiwan, 2015–2018

Hepatitis C virus (HCV) infection is the second leading cause of liver-related liver mortality in Taiwan and transfusion was an important route of HCV transmission before blood donor screening for anti-HCV in early 1990s. Therefore, continuous strengthening of the safety of blood products is an important issue to reduce the risk of transfusion-transmitted HCV. In Taiwan, highly sensitivity serology and NAT assays were used for blood donation screening to shorten the window period of HIV, HBV and HCV infections since 2013. In this short report by Huang et al.,⁹ a total of 15 cases of suspected transfusion-transmitted HCV infection from 2015 to 2018 were analyzed. None of the 91 bags of donated blood was positive for HCV nucleic acid. Eleven of the 15 suspected cases were positive for HCV nucleic acid, and 9 had genotyping data, genotype 1b in 5 (55.6%), genotype 2a in 3 (33.3%) and genotype 2b in 1 (11.1%). In short, no case of acute hepatitis C (AHC) due to transfusions of HCV contaminated blood product was confirmed from 2015 to 2018 in Taiwan.

First case of coronavirus disease 2019 (COVID-19) pneumonia in Taiwan

In December 2019, an outbreak of novel coronavirus (SARS-CoV-2) infection occurred in Wuhan, China, and then spread to many cities within China and several countries including Taiwan. As of February 18, 2020, there were 22 confirmed cases of Coronavirus Disease 2019 (COVID-19) in Taiwan. In this issue, Cheng et al.¹⁰ reported the first confirmed case of novel coronavirus pneumonia (NCP) in Taiwan. This case report clearly revealed the natural course of NCP with self-recovery, which may be a good example in comparison with medical treatments. In addition, the development of rapid diagnostic assays and effective treatment as well as wide use of chest CT remain the key contain the worldwide outbreak of SARS-CoV-2 infection in the future.

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