*What is new in 2013?**

What is new in hepatitis E in 2012?

All forms of acute hepatitis are prevalent in areas with poor sanitary conditions. It was used to consider hepatitis A is more common in those areas by acute hepatitis A antibody determinations. However, there are evidences that hepatitis E is almost as frequent as of hepatitis A in underprivileged countries. Initially, hepatitis E was identified in 1980 as epidemic, non–A, non-B hepatitis. The disease was reported in underdeveloped countries and was shown to be epidemiologically waterborne.

Hepatitis E is the fifth known cause of human acute hepatitis and jaundice throughout the world. Hepatitis E virus (HEV) is an RNA virus similar to that of hepatitis A virus. HEV genotypes 1 and 2 are the most common causes of epidemic diseases with high mortality in pregnant women. In developed countries, mostly HEV genotypes 3 and 4 are zoonotic infections.

HEV is a nonenveloped single-stranded RNA virus, which replicates in hepatocytes. Acute HEV antibodies are used for the diagnosis, though it is not specific at the time being. Epidemic form of HEV (genotype 1 and 2 infections) is clinically very similar to hepatitis A. In autochthonous form (genotype 3 and 4), extrahepatic manifestations are not rare. Although there is no immunization for HEV, epidemic form could be prevented by improving sanitary conditions. Since autochthonous forms are zoonoses, its prevention might begin with its containment among animals.

REFERENCES

- *Hoofragle JH, Nelson KE, Pancell RH. Hepatitis E. NEJM 2012, 367:1237-1244.*

- *Ozsoylu S, Sargın C, Koçak N. Levamisole in acute hepatitis. Clin Pediatr 1981;20:497-*

- *Ozsoylu S. Prevention of viral hepatitis. Iaç ve Tedavi Dergisi, 1997; 10:443-444.*

- *Ozsoylu S. Koçak N. Acute hepatitis failure related to hepatitis A. Lancet 1989;1:1001.*

- *Ozsoylu S. Non A, Non B hepatitis in leukemia. Am J Dischil 1984; 138:101.*

*This section has been prepared by Sinasi Özsoylu, MD; retired professor of Pediatrics, Hematology, and Hepatology.
e-mail: sinasiozsoylu@hotmail.com

Interleukin I (IL-1) and fever in 2012

Capitone *et al.* showed that mild heating of mice enhances postradiation recovery of polimorphonuclear leukocytes via interleukin I, interleukin 17, and G-CSF pathway.

IL-1 is the most important cytokine in regulating inflammatory immune responses. The importance of heat in chameleon survival following intravenous bacteria infusion would be explained by cytokine level because of this new research. IL-1 stimulates hematopoiesis, preferentially chemotherapy-induced leukopenia. With temperature elevation, IL-1 increases stimulating granulopoiesis via G-CSF secretion by IL-17 stimulation.

REFERENCE

Capitano ML, Nemath MJ, Moca TA, et al. Elevation body temperature enhances hematopoesis and neutrophil recovery after total body irradiation in an IL-1, IL-17, and G-CSF dependent maner. Blood 2012; 120:2600-2609.

Atypical hemolytic uremic syndrome, 2012

Hemolytic uremic syndrome (HUS) is characterized by triad of thrombocytopenia, microangiopathic hemolytic anemia, and acute kidney injury. More than 90% of the cases of HUS occur between the age 6 months and 5 years following acute diarrheal diseases caused by shiga-like toxin–producing bacteria (frequently with enterohemorrhagic Escherichea coli infection and less frequently with Shigella dysenteriae infection). HUS rarely may also be developed with Streptococcus pneumoniae infection.

Most of the 10% of patients with HUS showing no diarrhea history and no shiga-like toxin in stool would be categorized as having an atypical HUS. Acquired and hereditary forms of thrombotic thrombocytopenic purpura are excluded. In this from of "HUS," usually family history is present with similar clinical presentation.

Atypical HUSs are mostly related to heredity mutations in complement regulation, such as complement factor H, complement factor B, complement factor I, membrane cofactor protein C3 convertase components, and mutations of cobalamin C and thorombomodulin.

REFERENCES

1. Roebner RC, Kaplan BS, Copeowich L. A twice for reappresial of "Atypical" hemolytic uremic syndrome. Should all patients be treated the same? J of Pediatr, 2012;171:1527-31.

2. Noris M, Remuzzi G. Atypical hemolytic uremic syndrome. NEJM 2009; 361:1976-1687.

3. Ozsoylu S, Bilgin K. Oral megadose methylprednisolone for the treatment of thrombotic thrombocytopenic purpura. Turk of Med Sci, 1994; 22:129-130.

4. Lesher A, Song W-C. New complement regulation exposed. Blood 2009; 114:2263-2264.

Transfusion strategies for acute upper gastrointestinal bleeding

Villanueva C. et al NEJM 2013;368:11-21.

The authors compared the efficacy and safety of a restrictive transfusion strategy (RTS) with those of a liberal transfusion strategy (LTS).

A total of 921 patients with severe gastrointestinal (GI) bleeding were randomly identified. Of these 921 patients, 461 were assigned to an RTS when the hemoglobin level fell blow 7 g/dl and 416 were assigned to an LTS when the hemoglobin level fell below 9 g/dl. Randomization was stratified by the presence or absence of liver cirrhosis.

A total of 225 (51%) patients assigned to the RTS as compared with 61 (15%) assigned to the LTS did not receive transfusions ($p<0.01$). The probability of survival at 6 weeks was higher in the RTS group than in the LTS group (95% vs 91%). Further bleeding occurred in 10% and 16% ($p < 0.01$) in the group with 40% versus 46% ($p<0.02$) showed adverse affects.

The probability of survival was slightly higher in the RTS group of patients who had bleeding with peptic ulcer. Within the first 5 days, the portal pressure gradiant increased significantly in the patient assigned to the LTS group ($p = 0.03$), but not in the patients with the LTS group. Prognosis was better in the RTS group in patients with acute upper GI bleeding.

Recurrent Tonsillitis

Fourage M. et al Lancet 2013; 381(9862):266

A 40-year-old male with a high fever, bilateral tonsillitis having tonsillar exudate, and enlarged cervical lymph nodes was treated with amoxicillin (1 g, bid) for 4 days. The disease relapsed 3 days later and he was given cefpodoxime (200 mg bid) for 5 days. Even then the disease relapsed 1 day later. He had leukocytosis and elevated C-reactive protein. Throat culture and serology were negative for group A, β-hemolytic streptococcus, HIV, and Epstein-Barr virus.

The patient was suspected to have tonsillitis due to Fusobacterium necrophorum, was treated with metronidazole (500 mg tid orally) for 10 days, and recovered rapidly.

Although group A, β-hemolytic streptococous is the most prevelant bacteria causing acute tonsillitis, diphtheria, gonococcus, syphilis, and fusobacterium should also be considered in causing bacterial tonsillitis with exudate.

Duodenal infusion of donor feces for recurrent enteritis due to Clostridium difficile

Van Nood E, et al NEJM 2013;368:407-415

For the treatment of the recurrent Clostridium difficile infection, patients were randomly assigned to receive one of the three therapies:

1. An initial vancomycin treatment (500 mg, qid) for 4 days, followed by bowel lavage and subsequent infusion solution of donor feces through a nasoduodenal tube

2. A standard vancomycin regimen (500 mg, orally qid) for 14 days

3. A standard vancomycin regimen with bowel lavage

The primary end point was the resolution of diarrhea associated with C. difficile infection without relapse after 10 weeks. Sixteen patients in the infusion group 13 (81%) had the resolution of diarrhea associated with C. difficile after the first infusion. The remaining three patients received a second infusion of feces from different donor with the resolution in two patients. The resolution of C. difficile infection occurred in 31% patients receiving vancomycin alone and in 23% patients receiving vancomycin with bowel lavage.

These results indicate that normal donor feces transplantation would be a novel treatment for difficult C. difficile infections.

Cardiovascular events and intensity of treatment for Polycythemia vera patients

Marchioli R et al. NEJM 2013;368:22-33.

A total of 365 adults with JAK 2-positive Polycythemia vera were being treated with phlebotomy, hydroxyurea, or both to receive either more intense treatment (target hematocrit < 45%) or less intense treatment (target hematocrit = 45%–50%). The primary composite end point was the time until death from cardiovascular events, cardiovascular hospitalization, incidence of malignancy, progression to myelofibrosis, myelodysplasia or leukemic transformation, and hemorrhage.

Patients with P. vera having a target hematocrit of less than 45% had a significantly better prognosis.

Defining the role of sequential therapy for Helicobacter pylori infection

Greenberg ER, Chey WD

Lancet 2013; 381(9852): 180-182.

Antibiotic treatment to eradicate chronic Helicobacter pylori infection has become the mainstay of treatment for peptic ulcer disease.

A 10 day sequential treatment (5 days of lansoprosol and clarithromycin followed by 5 days of lansoprosol, clarithromycin, and metronidazole) seems to be better for H. pylori eradication. Bismuth therapy should be suggest if H. Pylori show reistance to antibiotics.

The cure from cholera—improving access to safe water and sanitation

Waldman RJ, Mintz ED, Papowitz HE

NEJM 2013; 368:592-594

A great majority of diarrheal diseases, cholera, and all diseases transferred by the oral-fecal route could be best prevented by clean water and sanitation. This strategy eliminated epidemic cholera from the US and Northern Europe long before the antibiotics and effective vaccines existed on the market. The development and maintenance of water and sewage treatment system assured safe drinking water and safe disposal of the sewage. This treatment helped keep contaminated sewage out of water, food products, and the environment. The strategy not only eliminated cholera but also dramatically reduced mortality related to diarrheal diseases.

Although achieving safe water and improved sanitation is a difficult propositon, it would be a cheaper and better way for controlling all diseases transferred by the oral–fecal route in the long run.