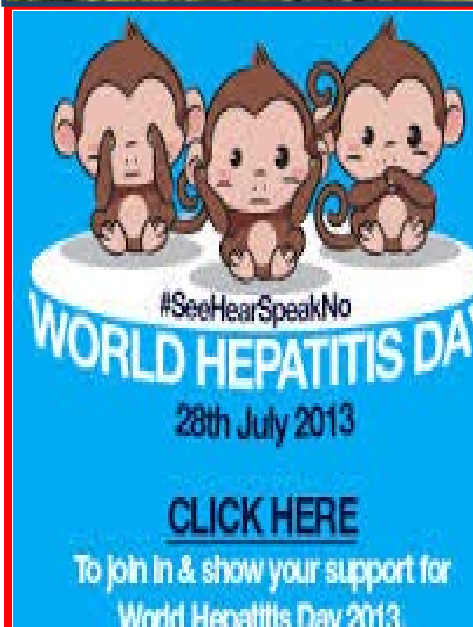


## Vision

TO GROW AS A CENTRE OF EXCELLENCE IN THE FIELD OF  
PHARMACEUTICAL AND BIOLOGICAL SCIENCE



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For your **comments/contribution** OR

*For Back-Issues,*

<mailto:gnipstbulletin@gmail.com>

**EDITOR:** Soumya Bhattacharya

**GURU NANAK INSTITUTE OF PHARMACEUTICAL SCIENCE AND  
TECHNOLOGY**

02-08-2013

## MESSAGE FROM GNIPST

GNIPST BULLETIN is the official publication of **Guru Nanak Institute of Pharmaceutical Science & Technology**. All the members of GNIPST are proud to publish the 27<sup>th</sup> Volume of “GNIPST BULLETIN”. Over the last two years this bulletin updating readers with different scientific, cultural or sports activities of this prestigious institute and promoting knowledge of recent development in Pharmaceutical and Biological Sciences. Student’s section is informing readers about some curious facts of drug discovery, science, sports and other relevant fields. We look forward to seeing your submission and welcome comments and ideas you may have.

## LETTER TO THE EDITOR.

## NEWS UPDATE

### △ **World Hepatitis day, 2013** (28<sup>th</sup> July, 2013)

The ‘World Hepatitis Day’ was observed on 28<sup>th</sup> July globally. Every year on 28 July, WHO and partners mark World Hepatitis Day to increase the awareness and understanding of viral hepatitis and the diseases that it causes. The theme of this year is “**This is hepatitis. Know it. Confront it.**” Hepatitis viruses A, B, C, D and E can cause acute and chronic infection and inflammation of the liver that can lead to cirrhosis and liver cancer. These viruses constitute a major global health risk with around 240 million people being chronically infected with hepatitis B and around 150 million people chronically infected with hepatitis C. World

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Hepatitis Day provides an opportunity to focus on specific actions, such as:

- strengthening prevention, screening and control of viral hepatitis and its related diseases;
- increasing hepatitis B vaccine coverage and integration of the vaccine into national immunization programmes;
- coordinating a global response to viral hepatitis. [Read more](#)

### △ **World Breastfeeding Week** (1<sup>st</sup> August, 2013)

World Breastfeeding Week is celebrated every year from 1 to 7 August in more than 170 countries to encourage breastfeeding and improve the health of babies around the world. It commemorates the Innocenti Declaration made by WHO and UNICEF policy-makers in August 1990 to protect, promote and support breastfeeding.

Breastfeeding is the best way to provide newborns with the nutrients they need. WHO recommends exclusive breastfeeding until a baby is six months old and continued breastfeeding with the addition of nutritious complementary foods for up to two years or beyond. [Read more](#)

### △ **Breastfed children are less likely to develop adhd later in life** (22<sup>nd</sup> July, 2013)

Researchers from Tel Aviv University have shown that breastfeeding may also help protect against Attention Deficit/Hyperactivity Disorder (ADHD), the most commonly diagnosed neurobehavioral disorder in children and adolescents.

[Read more](#)

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## △ Mechanism behind development of autoimmune hepatitis identified (23<sup>rd</sup> July, 2013)

A gene mutation disrupts the activity of certain immune cells and causes the immune system to erroneously attack the liver, according to a new animal study from the Icahn School of Medicine at Mount Sinai. The findings, published in the *Journal of Clinical Investigation*, will provide a new model for studying drug targets and therapies for Autoimmune Hepatitis (AIH), a condition for which the only treatment options are short-acting steroids or liver transplant. [Read more](#)

## △ Vitamin D, May Offer Hope for Treating Liver Fibrosis (13<sup>th</sup> April, 2013)

In a new study published in the journal *Cell*, scientists at the Salk Institute for Biological Studies have discovered that a synthetic form of vitamin D, calcipotriol (a drug already approved by the FDA for the treatment of psoriasis), deactivates the switch governing the fibrotic response in mouse liver cells, suggesting a potential new therapy for fibrotic diseases in humans. [Read more](#)

## △ Simple Ultrasound Treatment May Help Protect the Kidneys (1<sup>st</sup> August, 2013)

Ultrasound treatments may prevent acute kidney injury that commonly arises after major surgery, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). The findings suggest that this simple and noninvasive therapy may be an effective precaution for patients at risk. [Read more](#)

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## △ Potential New Target to Treat Malignant Pleural Mesothelioma (25<sup>th</sup> July, 2013)

Malignant mesothelioma is a rare asbestos-associated malignancy with limited therapeutic options. Researchers conclude that Ephrin (EPH) B2 seems to play an important role in malignant pleural mesothelioma cell lines and tumors. [Read more](#)

### HEALTH AWARENESS

## Hepatitis-Disease Manifestation & Pathophysiology

### WHAT IS HEPATITIS?

“Hepatitis” means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected.

Heavy alcohol use, toxins, some medications, and certain medical conditions can cause hepatitis. Hepatitis is most often caused by a virus.

In the United States, the most common types of viral hepatitis are Hepatitis A, Hepatitis B, and Hepatitis C. These are three different, contagious liver diseases caused by three unrelated viruses. Although all three types of hepatitis can cause similar symptoms, they have different modes of transmission.

### DISEASE MANIFESTATION

#### I. AUTOIMMUNE ACTIVE CHRONIC HEPATITIS

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This chronic inflammatory disease of the liver is characteristically associated with circulating autoantibodies and high serum immunoglobulin concentrations. Untreated, it progresses to cirrhosis, but the condition responds well to immunosuppressives .

Drugs used:

- Some 80% will benefit from *prednisolone* which should be continued in the long term, as most patients relapse if the drug is withdrawn.
- *Azathioprine* (1 mg/kg daily) is effective as a steroid sparing agent, and usually permits reducing of prednisolone to 5-10 mg/d. Increasing azathioprine to 2 mg/kg allows further reduction in prednisolone dose but haematological toxicity may result and the blood count must be monitored every 2 months.

2. VIRAL HEPATITIS

2.1 HEPATITIS A

- Passive immunity can be obtained by i.m. injection of globulin containing antibody to the virus which confers temporary protection for travellers visiting areas where the virus is endemic.
- Active immunisation with *Hepatitis A vaccine* is now preferable; protective antibody takes about two weeks to develop.

2.2 HEPATITIS B

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- It is more common in the immuno-compromised and in other high-risk groups including male homosexuals and intravenous drug abusers.
- In parts of Asia and Africa, chronic carriage occurs in up to 50% of the population. Worldwide there are about 300 million chronic carriers of hepatitis B virus and it is the most important cause of *primary hepatocellular carcinoma*.

#### Drugs used:

- *Interferon alfa* given for 4-6 months gives long-term clearance of hepatitis B virus from the plasma in 25-40% of patients. The effect is characteristically preceded by elevations in serum transaminases which reflects destruction of virus-infected hepatocytes.
- *Lamivudine*, a nucleoside analogue, inhibits replication of hepatitis B virus DNA and reduces hepatic inflammation.

#### Hepatitis B immunization.

Hepatitis B vaccine (inactivated B virus surfaceantigen adsorbed on aluminium hydroxide adjuvant) provides active immunity against hepatitis B infection, and in countries of low endemicity it is given to individuals at high risk, including healthcare professionals.

Hepatitis B immimoglobulin (pooled plasma selected for high titres of antibodies to the virus) provides passive immunity for post-exposure prophylaxis . In countries with high prevalence of

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hepatitis B the virus is transmitted vertically (from mother to baby). Passive immunoprophylaxis with immune globulin given to the baby at birth, followed by vaccination, is effective at preventing chronic carriage.

### 2.3 HEPATITIS D

- This virus replicates only in the presence of hepatitis B.

#### Drugs used:

- Interferon alfa is less effective than in other forms of viral hepatitis, giving sustained responses in about 15% of patients.

### 2.4 HEPATITIS C

- Most individuals infected with the hepatitis C virus become long-term carriers.
- Chronic infection with hepatitis C virus affects an estimated 170 million individuals worldwide. Up to one-third of these will progress to cirrhosis with its attendant complications including hepatocellular carcinoma.

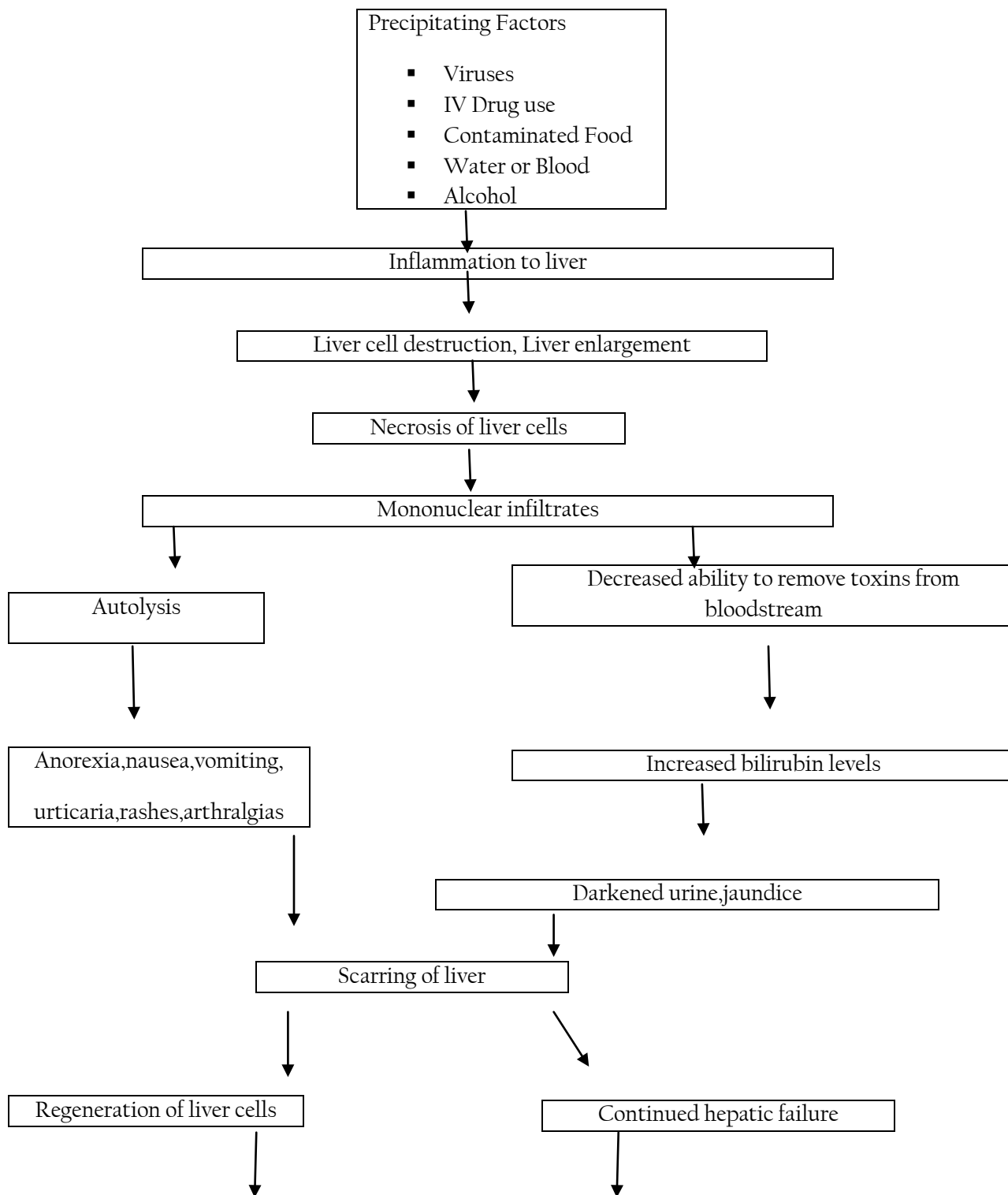
#### Drugs used:

- Treatment with *interferon alfa* leads to suppression of circulating hepatitis C viral RNA and improvement in hepatic inflammation in about 40% but at least half relapse on cessation of treatment.
- Combination of interferon alfa with *ribavirin* greatly enhances the response, achieving sustained remission in up to 70.



- **Pegylation** (conjugation with polyethylene glycol) also appears to enhance the efficacy of interferon alfa, possibly by increasing exposure time to the virus.

**PATHOPHYSIOLOGY:**



Return to normal health

Encephalopathy



Coma



Death

### ***WHAT ARE THE SYMPTOMS OF VIRAL HEPATITIS?***

Many people with viral hepatitis do not have symptoms and do not know they are infected. Even though a person has no symptoms, the virus can still be detected in the blood.

Symptoms, if they do appear, are similar for all types of hepatitis. If symptoms occur with acute viral hepatitis, they usually appear within several weeks to several months of exposure and can last up to 6 months. Symptoms of chronic viral hepatitis can take up to 30 years to develop. Damage to the liver can silently occur during this time. When symptoms do appear, they often are a sign of advanced liver disease. Symptoms for both acute and chronic viral hepatitis can include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, grey-colored stools, joint pain, and jaundice.

- Samrat Bose

Assistant Professor

GNIPST

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## DISEASE OUTBREAK NEWS

### △ **Middle East Respiratory Syndrome coronavirus (MERS-CoV)** (1<sup>st</sup> August, 2013)

WHO has been informed of an additional three laboratory-confirmed cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection in Saudi Arabia. [Read more](#)

## FORTHCOMING EVENTS

△ The 2nd Pharm. Tech IAPST International Conference on "New insights into diseases and recent therapeutic approaches" from 17th to 19th January 2014 in Kolkata, India. [Read more](#)

## DRUGS UPDATES

△ **FDA permits marketing of first U.S. test labeled for simultaneous detection of tuberculosis bacteria and resistance to the antibiotic rifampin** (25<sup>th</sup> July)

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The U.S. Food and Drug Administration today allowed marketing of the Xpert MTB/RIF Assay, the first FDA-reviewed test that can simultaneously detect bacteria that cause tuberculosis (TB) and determine if the bacteria contain genetic markers that makes them resistant to rifampin, an important antibiotic for the treatment of TB. [Read more](#)

## **CAMPUS NEWS**

△ One day seminar cum teachers' development programme for school teachers on the theme of "Recent Trends of Life Sciences in Higher Education" organized by GNIPST held on 29<sup>th</sup> June, 2013 at GNIPST auditorium. The programme was inaugurated by Prof . Asit Guha, Director of JIS Group, Mr. U.S. Mukherjee, Dy Director of JIS Group and Dr. Abhijit Sengupta, Director cum Principal of GNIPST with lamp lighting. The programme started with an opening song performed by the B.Pharm students of this institute. The seminar consists of a series of lectures, video presentations and poster session. On the pre lunch session 4 lectures were given by Dr. Lopamudra Dutta, Mr. Debabrata Ghosh Dastidar, Ms. Swati Nandy and Ms. Tamalika Chakraborty respectively. On their presentation the speakers enlighten the recent development of Pharmacy, Genetics and Microbiology and their correlation with Life Sciences. On the post lunch session, Ms. Saini Setua and Ms. Sanchari Bhattacharjee explained the recent development and career opportunities in Biotechnology and

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Hospital Management. The programme was concluded with valedictory session and certificate distribution.

About 50 Higher secondary school teachers from different schools of Kolkata and North & South 24 Parganas district of West Bengal participated in this programme. A good interactive session between participants and speakers was observed in the seminar. The seminar was a great success with the effort of faculties, staffs and students of our Institute. It was a unique discussion platform for school teachers and professional of the emerging and newer branches of Life Science.

△ The following B.Pharm. final year students have qualified, GPAT-2013. We congratulate them all.

Amanpreet Kaur, Mohua Das,

Sourav Bagchi, Uddipta Ghosh Dastidar,

Siddarth Shah, Prapti Chakraborty,

Subhradip Roychoudhury, Soumyajit Das,

Mounomukhar Bhattacharjee.

△ GNIPST is now approved by AICTE and affiliated to WBUT for conducting the two years post graduate course (M.Pharm) in **PHARMACEUTICS**. The approved number of seat is 18.

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## STUDENTS' SECTION

### ❖ WHO CAN ANSWER FIRST????

- ✓ *Which Nobel Laureate's birthday is celebrated as World Hepatitis Day?*
- ✓ *Which remarkable thing in medical science was first performed by T.E. Starzl?*

#### Answer of Previous Issue's Questions:

A) USB Device B) Distortion of the sense of test

- *Send your thoughts/ Quiz/Puzzles/games/write-ups or any other contributions for Students' Section & answers of this Section at [gnipstbulletin@gmail.com](mailto:gnipstbulletin@gmail.com)*

## EDITOR'S NOTE

I am proud to publish the 4<sup>th</sup> issue of 27<sup>th</sup> Volume of **GNIPST BULLETIN**. GNIPST BULLETIN now connected globally through *facebook account 'GNIPST bulletin'*

I want to convey my thanks to all the GNIPST members and the readers for their valuable comments, encouragement and supports.

I am thankful to **Dr. Abhijit Sengupta**, Director of GNIPST for his valuable advice and encouragement. Special thanks to **Dr. Prerona Saha** and **Mr. Debabrata Ghosh Dastidar** for their kind co-operation and technical supports.

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An important part of the improvement of the bulletin is the contribution of the readers. You are invited to send in your write ups, notes, critiques or any kind of contribution for the forthcoming special and regular issue.

## ARCHIVE

- The general body meeting of APTI, Bengal Branch has been conducted at GNIPST on 15<sup>th</sup> June, 2012. The program started with a nice presentation by Dr. Pulok Kr. Mukherjee, School of Natural Products, JU on the skill to write a good manuscript for publication in impact journals. It was followed by nearly two hour long discussion among more than thirty participants on different aspects of pharmacy education. Five nonmember participants applied for membership on that very day.
- GNIPST is now approved by AICTE and affiliated to WBUT for conducting the two years' post graduate course (M.Pharm) in PHARMACOLOGY. The approved number of seat is 18.
- The number of seats in B.Pharm. has been increased from 60 to 120.
- **AICTE has sanctioned a release of grant under Research Promotion Scheme (RPS) during the financial year 2012-13 to GNIPST** as per the details below:
  - a. *Beneficiary Institution:* Guru Nanak Institution of Pharmaceutical Science & Technology.
  - b. *Principal Investigator:* Dr. Lopamudra Dutta.
  - c. *Grant-in-aid sanctioned:* Rs. 16,25000/- only

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d. *Approved duration:* 3 years

e. *Title of the project:* Screening and identification of potential medicinal plant of **Purulia & Bankura** districts of West Bengal with respect to diseases such as diabetes, rheumatism, Jaundice, hypertension and developing biotechnological tools for enhancing bioactive molecules in these plants.