

## Ribavirin - an effective and safe treatment for hepatitis E

**Hepatitis E causes acute or chronic inflammation of the liver. It is an emerging disease which can be fatal and has no known treatment. Vincent Mallet, Stanislas Pol and their team at the Institut Cochin (Paris Descartes University, Assistance Publique – Hôpitaux de Paris, CNRS, Inserm) and French hospital-based teams\* have proved the efficacy of a treatment for patients suffering from chronic hepatitis E virus infection. Most patients can be cured when treated with ribavirin in monotherapy for 3 months. This work was published in [The New England Journal of Medicine](#) of 20 March 2014.**

The hepatitis E virus is the biggest cause of viral hepatitis in the world and it is estimated that a third of the global population is at risk of being infected with this virus. Although most cases occur in developing countries, there has been an increase in the number of cases reported in France and other industrialised countries where the virus is spread to humans by contaminated, undercooked food and blood. Until now there has been no treatment for patients suffering from hepatitis E.

Like the other hepatitis viruses, hepatitis E causes inflammation of the liver. In its acute form, the infection can be fatal for elderly people, pregnant women and people with liver disease. In immunosuppressed people (transplant patients, patients on chemotherapy or people living with HIV), the hepatitis E virus infection can progress to chronic hepatitis and cause cirrhosis.

### Developing a treatment for hepatitis E

Ribavirin is a drug prescribed for some types of viral respiratory infections in children and some forms of haemorrhagic fever. It is also used to treat hepatitis C. Vincent Mallet, professor at Paris Descartes University and hospital practitioner at the Cochin teaching hospital (AP-HP) and Nassim Kamar, professor at Paul Sabatier University and hospital practitioner at the Rangueil teaching hospital previously proved its efficacy for immunosuppressed patients suffering from a chronic hepatitis E virus infection (Mallet V, Nicand E, Sultanik P, Chakvetadze C, Tesse S, Thervet E, Mouthon L, Sogni P, Pol S. Brief communication: case reports of ribavirin treatment for chronic hepatitis E. *Ann Intern Med.* 2010 Jul 20;153(2):85-9 and Kamar N, Rostaing L, Abravanel F, Garrouste C, Lhomme S, Esposito L, Basse G, Cointault O, Ribes D, Nogier MB, Alric L, Peron JM, Izopet J. Ribavirin Therapy Inhibits Viral Replication on Patients With Chronic Hepatitis E Virus Infection. *Gastroenterology.* 2010 Nov;139(5):1612-8).

In this new study, data from 59 ribavirin-treated transplant patients suffering from hepatitis E was collected at 13 French transplant centres by Nassim Kamar (from the Rangueil teaching hospital in Toulouse) and Vincent Mallet. The researchers confirmed that "ribavirin prescribed as monotherapy for 3 months is an effective treatment for chronic hepatitis E virus infection". For most of the

\* Rangueil and Purpan teaching hospitals, Toulouse – Cochin Hospital, AP-HP), Pitié Salpêtrière (AP-HP) - Saint Eloi Hospital in Montpellier - Foch Hospital in Suresnes - Lyon and Croix Rousse de Lyon teaching hospitals- Paul Brousse Hospital (Villejuif, AP-HP) - Lapeyronie Hospital in Montpellier - Bretonneau Hospital and Trousseau teaching hospital in Tours - Bordeaux teaching hospital - Claude Huriez Hospital and Lille teaching hospital - Le Bocage teaching hospital in Dijon - Nantes teaching hospital

patients (46 out of 59 patients), the virus remained undetectable 6 months after treatment was discontinued. A longer treatment period appears desirable for highly immunosuppressed patients or those with detectable traces of the virus in the blood after a month of treatment. The only identified and foreseeable side effect of ribavirin is anaemia which was managed in most patients without any difficulty.

*"This work is the result of a genuine partnership between a large number of centres in France. It represents a major advance in this area" states Vincent Mallet. We hope our results will pave the way for further prospective studies designed to assess the efficacy of ribavirin for severe forms of hepatitis E virus infection, especially in countries in the southern hemisphere where the disease is a serious problem".*

#### **Publication**

*Ribavirin for Chronic Hepatitis E Virus Infection in Transplant Recipients*

Nassim Kamar, Jacques Izopet, Simona Tripon, Michael Bismuth, Sophie Hillaire, Jérôme Dumortier, Sylvie Radenne, Audrey Coilly, Valérie Garrigue, Louis D'Alteroche, Matthias Buchler, Lionel Couzi, Pascal Lebray, Sebastien Dharancy, Anne Minello, Maryvonne Hourmant, Anne-Marie Roque-Afonso, Florence Abravanel, Stanislas Pol, Lionel Rostaing, Vincent Mallet

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With its 9 training and research units and technological university institute, Paris Descartes University covers the full spectrum of knowledge in human and health sciences. It is the only university in the Ile-de-France region which teaches medicine, dentistry and maieutics with a health centre respected throughout the world for the quality of its training and the excellence of its research.

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