

The University of Edinburgh and Castle Craig Hospital Launch Pilot Study For Hyperbaric Oxygen Therapy in the Treatment of Alcoholic Liver Disease

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A pilot study to treat alcoholic liver disease with Hyperbaric Oxygen Therapy (HBOT) is being launched by Castle Craig Hospital and the Department of Hepatology at The University of Edinburgh, after obtaining Ethical Committee approval.

The Phase I study aims to show whether bone marrow stem cells are mobilised into the bloodstream following HBOT, in patients who recently drank alcohol to excess^[1], with or without chronic liver disease. The trial will also examine whether there is an improvement in liver function following HBOT. The Chief Investigator of the trial is Professor Peter Hayes, Professor of Hepatology, Scottish Liver Transplant Unit.

Participants will have two blood samples drawn a week apart prior to starting HBOT. They will have a total of 20 sessions of two hours of hyperbaric oxygen at 1.75 to 2 ATM with blood drawn after 10 and 20 sessions and again one week later.

HBOT has been shown to cause mobilisation of bone marrow stem cells into the blood stream in healthy volunteers and patients who have received radio therapy for cancer.^[2] Additional data have shown that patients with alcoholic hepatitis who survive tend to have larger stem cell counts within the blood, than those who go on to die. There are several reports of patients with chronic liver disease experiencing an improvement in liver functioning after infusion of their own bone marrow stem cells.^[3] Unfortunately, current methods of obtaining bone marrow stem cells for infusion are imperfect and can be painful and unpleasant with the risk of complications.

Currently the only "curative" treatment for cirrhosis of the liver is transplantation but due to donor shortages and the implications of taking life long anti-rejection drugs, this is not available to the majority of patients. There is also considerable controversy regarding providing "alcoholic" patients with liver transplants.

Professor Peter Hayes, Chief Investigator of the trial and Professor of Hepatology at Edinburgh Royal Infirmary remarked: "Most ways of increasing stem cells are very complicated. The beauty of this approach is its simplicity. We have to do the study first before getting carried away."

Peter McCann, Chairman of Castle Craig Hospital said: "We are committed to helping patients, not only with their addictive disease, but also with their inevitable medical complications, and we hope that hyperbaric oxygenation will assist in this respect."

Safety:

The type III Hyperbaric Chamber, operated at Castle Craig Hospital, was deregulated by an Act of Parliament in 2008 since perceived risks due to fire, oxygen toxicity and infection control proved to be groundless in these units.[\[4\]](#) The participating staff at Castle Craig Hospital are fully trained in managing the hyperbaric chamber and all precautions are taken.

About Hyperbaric Oxygen Therapy

HBOT involves breathing pure oxygen to higher than atmospheric pressures in an enclosed chamber. Frequently used for divers with the "bends", it has many other indications both official and experimental or "off label".

Castle Craig's purpose-built 18 seat chamber is operated by trained staff and is equipped with television to provide patients with educational therapeutic lectures while in the chamber. When fully operational this chamber is cost effective and the course of treatment need cost no more than £300 for ten sessions, with the potential to save hundreds of times this amount using conventional health care.

Other trials:

FDA approved trials are also taking place in the USA researching the effects of HBOT in AIDS/HIV, trauma/post traumatic stress disorder, autism, cerebral palsy and stroke cases.[\[5\]](#)

About Castle Craig Hospital

Located in the near Edinburgh, Castle Craig Hospital is the UK's largest single site addiction provider. Established in 1988, Castle Craig Hospital has helped over 7,000

patients on the road to recovery from their addictions. The Minnesota Model/12 Step Approach is employed which embraces cognitive behavioural therapy. A skilled, multidisciplinary team provides medical and psychiatric care, intensive psychotherapy, detoxification and relapse prevention. Family therapy, extended care and aftercare are also provided.

Castle Craig is a major contractor to the National Health Service and is recognised by the major medical insurers in the U.K, the U.S and Europe. While Castle Craig is a national resource for the people of Scotland, many insurance companies from other countries also fund the treatment. www.castlecraig.co.uk

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References:

[1] Above 50 units a week, within 3 weeks of the start of the trial.

[2] Stephen R. Thom, Veena M. Bhopole, Omalda C. Velazquez, Lee J. Goldstein, Lynne H. Thom, Donald G. Buerk. *Stem mobilisation by hyperbaric oxygen*. AMJ Physiol Heart Circ Physiol. 240: H1 378 – H1 386 2006.

[3] Professor Stuart J Forbes. *Stem cell therapy for chronic liver disease-choosing the right tools for the job*. Gut, Feb 2008;57:153-155. Sourced online at:
www.natap.org/2008/HCV/011408_01.htm

[4] Private and voluntary healthcare: Care Standards Act 2000. *Regulations and national minimum standards consultation document*. March/June 2008. Product no. 280611. Gateway no 8565. Sourced online at: http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_083519

[5] Sourced online at: <http://clinicaltrials.gov/ct2/results?term=hyperbaric>