Three-Year Prospective Clinical and Radiological Results of a New Flexible Horseshoe Acetabular Cup


THIS PAPER reports the three-year follow up of a clinical trial of a MOTIS® acetabular cup. 25 patients were split into two separate groups and were implanted with the product (though two different stem designs were used across the groups.)

Overall, all 25 acetabular cups exhibited excellent fixation at up to 3 years and 19 patients have shown positive results at this stage with only 1 patient requiring a revision at 21 months due to a squeak and a further 3 patients requiring a revision due to calcar resorption. This squeak issue has since been established experimentally and resolved as a design issue, while investigations into the calcar resorption are still underway. However there was no correlation between identified problems across both groups.

In summary, the use of MOTIS in this application enables a unique implant design of a polymeric monobloc bearing component with a large bearing diameter and minimal thickness, which enables less bone removal during implantation. This study has also demonstrated the potential for positive fixation of cementless devices, possibly due to improved load transfer provided by a more flexible material.

Interest in the use of PEEK-OPTIMA® biomaterials in total joint arthroplasty continues to grow due to the improved performance properties offered. This study from Field, in particular, demonstrates that MOTIS may be a viable alternative to incumbents as well as offering design flexibility due to its unique properties.

Invibio continues to invest in new product development projects, as most recently demonstrated by the EnDuRE (Enhanced Durability Resurfacing Endoprosthesis) project which saw the development of a new kind of hip implant at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA. MOTIS was selected as the material of choice for the hip socket due to its high wear resistance, strength and biocompatible properties. Project partnerships such as this indicate that we can offer expert assistance for similar programs which can broaden your product portfolio.
The information contained herein is believed to be an accurate description of the typical characteristics and/or uses of Invibio product(s). However, it is your ultimate responsibility to determine the performance, efficacy and safety of using Invibio product(s) for a specific application. Suggestions of uses should not be taken as inducements to infringe any particular patent or as a representation that the product is suitable for such uses. INVIBIO MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR OF INTELLECTUAL PROPERTY NON-INFRINGEMENT, INCLUDING, BUT NOT LIMITED TO PATENT NON-INFRINGEMENT, WHICH ARE EXPRESSLY DISCLAIMED, WHETHER EXPRESS OR IMPLIED, IN FACT OR BY LAW. FURTHER, INVIBIO MAKES NO WARRANTY TO YOUR CUSTOMERS OR AGENTS, AND HAS NOT AUTHORIZED ANYONE TO MAKE ANY REPRESENTATION OR WARRANTY OTHER THAN AS PROVIDED ABOVE.

INVIBIO SHALL IN NO EVENT BE LIABLE FOR ANY GENERAL, INDIRECT, SPECIAL, CONSEQUENTIAL, PUNITIVE, INCIDENTAL OR SIMILAR DAMAGES, INCLUDING WITHOUT LIMITATION, DAMAGES FOR HARM TO BUSINESS, LOST PROFITS OR LOST SAVINGS, EVEN IF INVIBIO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, REGARDLESS TO THE FORM OF ACTION.

© 2013 Invibio Biomaterial Solutions.

Invibio® and the Invibio logo are registered trademarks of Invibio Ltd. PEEK-OPTIMA® is a registered trademark of Invibio Ltd.

O-DP-INV-E-0015-A (7/2013)