

## Combining biologics and cytotoxics in the treatment of inoperable cholangiocarcinoma

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Cholangiocarcinomas are adenocarcinomas arising in the biliary tract epithelium either intrahepatic or extrahepatic. The disease is rare and a standard chemotherapy regime for inoperable disease has only been internationally accepted in the last few years. Based on phase III data from the ABC02 trial, gemcitabine combined with a platinum is now the treatment of choice. In other tumors from the gastrointestinal tract, the addition of newer biological compounds such as monoclonal antibodies and tyrosine kinase inhibitors has increased the efficacy of cytotoxics. Data on this approach is sparse in cholangiocarcinoma.

A comprehensive literature search identified a few studies on monotherapy with biologics. Only sorafenib, erlotinib, and lapatinib have been tested in reasonably large studies to estimate whether the drugs may be efficacious as monotherapy. The most promising drug was erlotinib with a response rate of 8%. Sorafenib has low activity with a 2% response rate while no responses were observed with lapatinib. Cetuximab and midostaurin have shown specific effect, but in a very limited number of patients.

More data is available for biologics combined with cytotoxics. Bevacizumab, cetuximab, and selumetinib have been shown to be tolerable and to have effect when combined with chemotherapy. It may not be superior to chemotherapy alone, but e.g. cetuximab have been shown to revert chemoresistance.

More phase II data preferably from randomized trials is needed in order to select the most promising combination of biologics and cytotoxics for phase III trials. International collaboration is mandatory for conducting larger trials.

### Biography

Lars Henrik Jensen is a medical doctor currently working in a hospital setting serving half of the Danish population with inoperable cholangiocarcinoma. He completed his Ph.D in 2007 and has been an exchange visitor at University of Southern California. His primary areas of research are gastrointestinal cancers, clinical trials, and molecular markers.