

HUBUNGAN ANTARA EKSPRESI LEUCOCYTE CELL-DERIVED CHEMOTAXIN 2 (LECT2) TERHADAP EKSPRESI COLLAGEN TYPE 1 ALPHA 1 (COL1A1) PADA PASIEN ATRESIA BILIER PASCA OPERASI KASAI

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INTISARI

Atresia bilier adalah sebuah kondisi medis terdapatnya obstruksi pada traktus biliaris. Tindakan Kasai merupakan prosedur bedah untuk mengalirkan bile (empedu) menuju ke intestinal. Meskipun sudah dilakukan prosedur Kasai namun sebagian kasus atresia bilier masih berkembang menjadi liver fibrosis. Salah satu gen yang diduga terlibat adalah *LECT2*. *LECT2* mengatur aktivasi *TGF-β* yang kemudian mengatur ekspresi *COL1A1*. Peningkatan *mRNA LECT2* bersama *COL1A1* menghambat proliferasi dan meningkatkan aktivitas apoptosis sel stellata hati yang mengarah ke fibrosis hati. Penelitian ini dilakukan untuk mengetahui perbandingan ekspresi *COL1A1* pada pasien atresia bilier pasca operasi Kasai dibandingkan dengan kelompok kontrol dan mengetahui hubungan antara ekspresi *LECT2* dengan ekspresi *COL1A1*. Design penelitian cross sectional pada pasien pediatri yang terdiagnosis kolestasis yang dilakukan kolangiografi intraoperatif dan biopsi hepar, kemudian ekspresi *COL1A1* dibandingkan antara kelompok atresia bilier dengan kelompok kontrol dan dilihat hubungan antara ekspresi *LECT2* dengan ekspresi *COL1A1*. Hasilnya didapatkan 25 sampel hepar yang terdiri atas 12 (48%) atresia bilier dan 13 (52%) kontrol. Hasilnya didapatkan hubungan ekspresi *COL1A1* yang bermakna pada pasien atresia bilier dan kontrol ($p=0,002$), derajat fibrosis ($p=0,007$), dan tipe atresia bilier ($p=0,04$). Didapatkan juga hubungan bermakna antara *LECT2* terhadap *COL1A1* ($p=0,014$) dengan korelasi positif ($R^2=0,223$). Kesimpulannya, terdapat peningkatan ekspresi *COL1A1* pada pasien atresia bilier dibandingkan dengan kontrol dan ekspresi *LECT2* berhubungan signifikan dengan ekspresi *COL1A1*.

Kata kunci: atresia bilier, fibrosis hepar, *LECT2*, *COL1A1*

CORRELATION BETWEEN LEUCOCYTE CELL-DERIVED CHEMOTAXIN 2 (LECT2) EXPRESSION AND COLLAGEN TYPE 1 ALPHA 1 (COL1A1) EXPRESSION IN BILIARY ATRESIA PATIENTS FOLLOWING KASAI SURGERY

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ABSTRACT

Biliary atresia is a medical condition where there is obstruction in the biliary tract. Kasai is a surgical procedure to drain bile to the intestine. Although the Kasai procedure has been performed, some cases of biliary atresia still develop into liver fibrosis. One of the genes suspected of being involved is *LECT2*. *LECT2* regulates the activation of *TGF-β* then regulates the expression of *COL1A1*. Increased *LECT2* mRNA together with *COL1A1* inhibits proliferation and increases the apoptosis activity of hepatic stellate cells lead to liver fibrosis. This study try to determine the comparison of *COL1A1* expression in biliary atresia patients after Kasai surgery compared to the control group and to determine the relationship between *LECT2* expression and *COL1A1* expression. This study was conducted cross-sectionally in pediatric patients diagnosed with cholestasis who underwent intraoperative cholangiography and liver biopsy, then *COL1A1* expression was compared between the biliary atresia group and the control group and the relationship between *LECT2* expression and *COL1A1* expression. As the results, 25 liver samples were obtained consisting of 12 (48%) biliary atresia and 13 (52%) controls. The results showed a significant relationship between *COL1A1* expression in biliary atresia patients and controls ($p=0.002$), degree of fibrosis ($p=0.007$), and type of biliary atresia ($p=0.04$). A significant relationship was also found between *LECT2* and *COL1A1* ($p=0.014$) with a positive correlation ($R^2=0.223$). In conclusion, there is an increase in *COL1A1* expression in biliary atresia patients compared to controls and *LECT2* expression is significantly related to *COL1A1* expression.

Keywords: biliary atresia, liver fibrosis, *LECT2*, *COL1A1*