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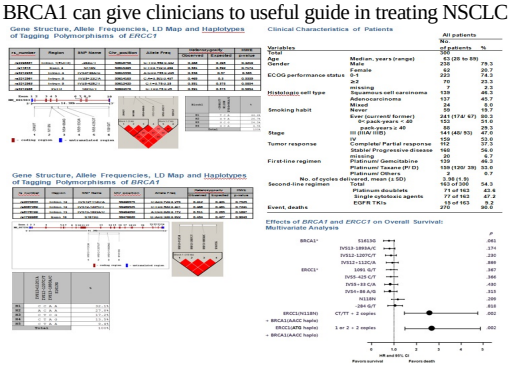
Two Gene Prognostic Model with ERCC1 and BRCA1 in NSCLC Patients Treated With Platinum Doublets

인하대병원

*조윤정, 류정선

Background/Aims: Among genes involving DNA repair pathway, we found that germline variation of ERCC1 codon 118 or a haplotype of BRCA1 was associated with differences in outcome in NSCLC Pts. treated with platinum doublets. Approach with multiple genes could be able to generate a more robust and useful model for clinicians to potentially utilize as a guide in patient assignment. **Methods:** The Lung Cancer Cohort of Inha University Hospital has constructed a database system that includes clinical information and matched peripheral blood DNA. We chose 300 patients with advanced-stage disease who were treated with more than two cycles of platinum-based chemotherapy as a first-line treatment, who underwent full follow-up at our hospital, and whose peripheral blood lymphocytes were available for analysis. These 300 consecutive NSCLC patients chosen gave their written informed consent and agreed to the purposes of the study. **Results:** The median age was 63 years. Histologically, 139 (46.3%) of the patients had squamous cell carcinomas and 137 (45.7%) had adenocarcinomas. Median survival time of Pts. was 13.0 months. We observed no significant association between ten SNPs (Q504K, IVS5-425C/T, IVS5+33C/A, IVS4+86A/G, N118N, and -284G/T for ERCC1; S1613G, IVS13-1893A/C, IVS12-1207 C/T, and IVS12112C/A for BRCA1) and overall survival. In gene-gene interaction analyses between ERCC1 and BRCA1, Pts. with variant genotype of ERCC1 N118N and wild-type genotypes of four tagging SNPs of BRCA1 showed statistically significant shorter survival in both analyses of Kaplan Meier and Cox's proportional hazard model (adjusted HR, 95% CI: 1.984, 1.103 to 3.569 for N118N+1613S/S; 1.889, 1.089 to 3.277 for N118N+IVS13-1893A/A; 2.205, 1.077 to 4.517) for N118N+IVS12-1207C/C; 2.248, 1.095 to 4.615 for N118N+ IVS12112C/C). In haplotype to haplotype analyses, Pts. with variant type haplotype (ATG) of ERCC1 and wild-type haplotype (AACC) of BRCA1 showed statistically significant shorter survival (adjusted HR, 95% CI: 2.643, 1.416 to 4.932). **Conclusions:** This result suggests that the model of tagging SNPs of ERCC1 and BRCA1 can give clinicians to useful guide in treating NSCLC Pts. with platinum doublets.



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Risk factors and outcome for acute kidney injury after lung transplantation

[1]연세의대 신촌세브란스 병원, 호흡기내과, [2]연세의대 신촌세브란스 병원, 신장내과, [3]연세의대 신촌세브란스 병원, 흉부외과

*김남은[1], 김치영[1], 이진구[3], 백효채[3], 박정탁[2,1], 김범석[2,1], 김송이[1], 이상훈[1], 정경수[1], 임아영[1], 정지예[1], 김영삼[1], 강영애[1], 장준[1], 박무석[1]

Background/Aims: AKI is frequently seen after lung transplantation. In this study, incidence of AKI after LTx and risk factors were analyzed through donor factors (age, total lung capacity), peri-operative factors (size mismatch, ischemia time), and post-operative factors (nephrotoxic antibiotics). **Methods:** From 2012 to 2017, 161 LTx patients were evaluated. 4 Patients under age 18, 3 who had both lung, kidney transplantation, 2 who had LTx with OPCAB were excluded. And 2 who already had RRT and 1 who had re-transplantation were also excluded. Primary outcome were AKI occurrence rate and mortality of postoperative 3 months, 1 year **Results:** Total 149 patients were enrolled, 87(58%) patients were male, mean age 53 yrs. Total incidence of ALI was 52 (35%). AKI I, II, and III were 9 (7%), 11 (10.8%), and 32(14.6%), respectively. 28 patients (17.7%) needed RRT. Postoperative 3-month mortality rates in patients with no AKI, AKI stage I, stage II and III were 5%, 0%, 9%, and 52%, respectively (P=0.00). 1-yr mortality rates in patients with no AKI, AKI stage I, stage II and III were 22%, 11%, 54%, and 71%, respectively (P=0.00) Median survival time in patients with no AKI, and AKI stage I, II, and III were 49.9, 33.6, 26.19, and 13.42 months, respectively (95% CI 6.978-19.875). Mortality rates in patients who need RRT were 82.1%, which did not need RRT were 30.6% (P=0.003). In logistic regression analysis, using colistin (OR 2.562, 95% CI 1.237-5.307, P=0.001) and amounts of RBC transfusion during operation (OR 1.106, 95% CI 1.030-1.200, P=0.007) increased AKI. Otherwise age of donor, recipient and size mismatch of lung, ECMO, ventilator apply before LTx were not associated with postoperative AKI **Conclusions:** Perioperative RBC transfusion, postoperative using nephrotoxic antibiotics could increase risk of AKI after LTx, and the stage of AKI was associated with increased mortality rate