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Title: Prognostic value of ERCC1 expression in advanced non-small cell lung cancer (NSCLC)

Dr. Jens 29657 Kollmeier jens.kollmeier@helios-kliniken.de MD ¹, Dr. Torsten 29658 Blum torsten-gerriet.blum@helios-kliniken.de MD ¹, Dr. Daniel 29659 Misch daniel.misch@helios-kliniken.de MD ¹, Dr. Andreas 29660 Roth andreas.roth@helios-kliniken.de MD ², Dr. Christian 29661 Boch christian.boch@helios-kliniken.de MD ¹, Dr. Wolfram 29678 Gruening wolfram.gruening@helios-kliniken.de MD ³, Dr. Catharina 29682 Crolow catharina.crolow@helios-kliniken.de MD ¹, Dr. Sergej 29690 Griff sergej.griff@helios-kliniken.de MD ², Dr. Thomas 29697 Mairinger thomas.mairinger@helios-kliniken.de MD ² and Prof. Torsten T. 29704 Bauer torsten.bauer@helios-kliniken.de MD ¹. ¹ Lungenklinik Heckeshorn, Department of Pneumology, HELIOS Klinikum Emil von Behring, Berlin, Germany, 14165 ; ² Institute for Tissue Diagnostics, HELIOS Klinikum Emil von Behring, Berlin, Germany, 14165 and ³ Department of Pneumology, HELIOS Kliniken Schwerin, Germany, 19049 .

Body: Background: The immunohistochemical (IHC) detection of the "excision repair cross-complementation group 1" (ERCC1) protein in resected NSCLC is prognostically relevant. Pts with ERCC1-neg. tumors appear to benefit from adjuvant cisplatin-based chemotherapy (Ctx), whereas pts with ERCC1-pos. tumors do not. Aim: We compared survival of pts with non-operated NSCLC III/IV according to ERCC1. Methods: We analyzed 398 pts (m=248, f=150) newly diagnosed with NSCLC stage III/IV between 10/2009 and 12/2010. Prospectively, ERCC1 expression determined by IHC was measured and indicated as H-score. Pts where no IHC and/or no H-score could be performed were excluded. Results: 271/398 cases (68%) were suitable for IHC. 175/271 (65%) of tumors were ERCC1 pos., 96/271 (35%) ERCC1 neg. 177/271 (65%) received platin. Survival times in days were (mean \pm SEM): platin+/ERCC1- 404 \pm 25 (n=67); platin+/ERCC1+ 346 \pm 23 (n=110); platin-/ERCC1- 144 \pm 23 (n=29); platin-/ERCC1+ 268 \pm 33 (n=65). In Cox hazard regression analysis, the factors platinum (p<0.001) and ERCC1 (p=0.01) were not independent (p=0.001, interaction term).

Conclusions: Pts with palliative platin-based Ctx for advanced NSCLC had significantly longer OS when the tumor showed no significant ERCC1 expression. In pts who did not have platin-based Ctx, the absence of ERCC1 expression was prognostically unfavorable. This study confirms observations from adjuvant therapy also for palliative Ctx.