A predictive model for acute exacerbation of idiopathic interstitial pneumonias

Masato Karayama[1], Yoichiro Aoshima[1], Takahito Suzuki[1], Kazutaka Mori[2], Nobuko Yoshizawa[3], Shintaro Ichikawa[3], Shinpei Kato[4], Koshi Yokomura[4], Masato Kono[5], Dai Hashimoto[5], Yusuke Inoue[1], Hideki Yasui[1], Hironao Hozumi[1], Yuzo Suzuki[1], Kazuki Furuhashi[1], Tomoyuki Fujisawa[1], Noriyuki Enomoto[1], Satoshi Goshima[3], Naoki Inui[1,6] and Takafumi Suda[1]

[1]Second Division, Department of Internal Medicine, Hamamatsu University School of Medicine, Hamamatsu, Japan. [2]Department of Respiratory Medicine, Shizuoka City Shimizu Hospital, Shizuoka, Japan. [3]Department of Radiology, Hamamatsu University School of Medicine, Hamamatsu, Japan. [4]Department of Respiratory Medicine, Seirei Mikatahara General Hospital, Hamamatsu, Japan. [5]Department of Respiratory Medicine, Seirei Hamamatsu General Hospital, Hamamatsu, Japan. [6]Department of Clinical Pharmacology and Therapeutics, Hamamatsu University School of Medicine, Hamamatsu, Japan.

Corresponding author: Masato Karayama (karayama@hama-med.ac.jp)

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A predictive model using existence of radiographic honeycombing, age >75 years and serum lactate dehydrogenase level >222 U·L^{-1} discriminated the risk of acute exacerbation in patients with idiopathic interstitial pneumonias. https://bit.ly/3YvSkrc

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Abstract

Background Acute exacerbation of idiopathic interstitial pneumonias (AE-IIPs) induces permanent pulmonary dysfunction and is potentially lethal. The unpredictable occurrence of AE-IIPs remains an important clinical issue in the management of IIPs.

Methods In this multicentre, retrospective, observational study, a predictive score for AE-IIPs was designed using clinical factors based on multivariate Fine–Gray analysis in patients with IIPs.

Results Based on multivariate Fine–Gray analysis in an exploratory cohort of 487 patients with IIPs, the predictive score for AE-IIPs was determined as follows: 1 point each was added for honeycombing on high-resolution computed tomography (H), age >75 years (A) and lactate dehydrogenase level >222 U·L^{-1} (L); the total score ranged from 0 to 3 (HAL score). The HAL score discriminated the risk of AE-IIPs with a C-index of 0.62 (95% CI 0.56–0.67); this discrimination was verified in a validation cohort of 402 patients with IIPs with a C-index of 0.67 (95% CI 0.60–0.73). In a combined cohort, the estimated cumulative risks for AE-IIPs at 1, 2, 3, 5 and 10 years were 1.9%, 3.5%, 5.1%, 7.7% and 12.9%, respectively, in the total score 0 group; 4.7%, 8.3%, 12.0%, 17.7% and 28.4%, respectively, in the total score 1 group; and 8.0%, 14.2%, 19.7%, 28.7% and 43.0%, respectively, in the total score ⩾2 group. Subgroup analysis revealed that the HAL score was applicable to patients with and without idiopathic pulmonary fibrosis.

Conclusions The HAL score discriminated the risk of AE-IIPs and could aid in the management of IIPs.