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Presentation Title: A Model and Risk Score for Predicting Nevirapine-associated Rash among HIV-infected Patients: In Settings of Low CD4 Cell Counts and Resource Limitation

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Author Block: **S. KIERTIBURANAKUL**¹, S. SUNGKANUPARPH¹, K. MALATHUM¹, S. WATCHARANANAN¹, B. SATHAPATAYAVONGS¹, A. CHAROENYINGWATTANA¹, S. MAHASIRIMONGKOL², W. CHANTRATITA¹;
¹Faculty of Med. Ramathibodi Hosp., Bangkok, Thailand, ²Ministry of Publ. Hlth., Bangkok, Thailand.

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Background: Nevirapine (NVP)-base regimen is commonly used as the first-line antiretroviral therapy in resource-limited countries. However, rash is the most common adverse drug reaction associated with NVP. We aimed to develop a model and risk score for predicting NVP-associated rash among HIV-infected patients who were initiated NVP at low CD4 cell counts in resource-limited settings. **Methods:** Cross-sectional study was conducted between March 2006 and August 2007. **Results:** A total of 222 patients were random sampling as a training set. In this set, 116 (52.2%) were males with a median (IQR) age of 35.2 (31.1-42.0) years. Median (IQR) CD4 cell count at time of NVP initiation was 103.5 (35-225) cells/mm³. Of these, 72 and 150 patients were in "rash" and "no rash" group, respectively. Four factors were independently associated with rash: a history of drug allergy (odds ratio (OR), 4.01; 95% confidence interval (CI), 1.75-9.20; *P* = 0.001), body weight ≤55 kg. (OR, 2.02; 95% CI, 1.09-3.76; *P* = 0.026), not received slow dose escalation (OR, 2.00; 95% CI, 1.06-3.77; *P* = 0.032), and no concomitant drug(s) (OR, 2.48; 95% CI, 1.32-4.64; *P* = 0.005). Receiver-operator characteristic analysis yielded area under the curve of 71% and the goodness-of-fit statistics was 6.48 (*P* = 0.840). The variables were given scores of 14, 7, 7 and 9, respectively. A cutoff ≥21 points defined the high risk individuals which yielded specificity and positive predictive value of 99% and 69%, respectively, with OR of 3.96 (95% CI, 1.79-8.86, *P* = 0.001). **Conclusions:** A model and risk score for predicting NVP-associated rash among HIV-infected performed well in this study population. It might be useful for predicting the risk of rash after NVP initiation among HIV-infected patients with low CD4 cell count.