

The Dutch diagnostic model for laboratory animal allergen sensitization was generalizable in Canadian apprentices

Eva Suarthana^{a, b, c}, Evert Meijer^b, Dick Heederik^b, Heberto Ghezso^a, Jean-Luc Malo^a and Denyse Gautrin^a  

^aDepartment of Chest Medicine, Hôpital du Sacré-Coeur de Montréal, Montreal, Canada

^bIRAS (Institute for Risk Assessment Sciences), Environmental Epidemiology Division, Utrecht University, Utrecht, The Netherlands

^cCommunity Medicine Department, Faculty of Medicine, University of Indonesia, Jl. Pegangsaan Timur, Jakarta Pusat, Indonesia

Accepted 3 June 2008.

Available online 12 December 2008.

Abstract

Objective

To assess the transportability of an existing diagnostic questionnaire model for the sensitization to laboratory animal (LA) allergens.

Study Design and Setting

The model was externally validated in 414 Canadian animal health apprentices. Several approaches were used: (1) no adjustment; (2) recalibration of the intercept of the model; (3) re-estimation of the intercept and the regression coefficients of predictors; and (4) model revision, by excluding the existing predictor(s) and/or including new predictor(s). The bootstrapping procedure was done following the third and fourth methods. The calibration was assessed graphically and with the Hosmer–Lemeshow (HL) test. Discriminative properties were determined by the area under the receiver operating characteristic curve (ROC area).

Results

When applied without adjustment, the model's discriminative ability was adequate (ROC area was 0.74 vs. the original ROC area of 0.76); the calibration was poor (HL test $P < 0.001$). The other methods yielded models with good calibration ($P > 0.10$) and reasonable discrimination

(ROC area ranged between 0.73 and 0.75). The refitted and revised model showed a good internal validity (correction factor from the bootstrapping procedure was more than 0.90).

Conclusion

Once updated, the diagnostic model is valid and can be applied with reasonable performance in an animal health apprentice setting.

Keywords: Diagnostic model; High molecular weight allergens; Occupational sensitization; Questionnaire; Screening; Validity

Diakses dari : http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T84-4V4KC83-4&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1000513062&_rerunOrigin=scholar.google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=e8b5056a46e30c7995aeeb2fef42dc8e