Clinical epidemiology

2772 The diagnosis of asthma: Main determinants for clinical decision
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811 subjects attending the European Respiratory Health Survey, stage 2, in three Italian centers were classified by a panel of three experienced clinicians in each center as current asthmatics or not. Using the "expert classification" as outcome, discriminant analysis and neural networks were utilized for pattern recognition of clinical decision, that is to determine which factors were more important for the physician in classifying a subject as asthmatic or not. In the first model considered, the variables included were gender, smoking status, type of therapy, disease duration, depression, level of medical follow-up and socio-economic status. A model including these variables accurately predicted QOL (adjusted R² = 0.86). This model was less satisfactory for predicting QOL in the test group (adjusted R² = 0.36).

Conclusions: Disease severity does not seem to be a strong determinant of QOL in asthma. The model computed in a group of well-supervised patients had only limited value in predicting QOL in a group of suboptimally supervised patients. QOL may provide useful information on actual patient's status, especially among patients treated by physicians in the community, or in the absence of health care databases.

2774 Insulin and glucose levels are associated with impaired ventilatory function in non-diabetic men
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Greater cardiovascular mortality risk among subjects with lower levels of ventilatory function has been consistently reported from prospective studies, but the underlying mechanisms are not known. Increased risk of coronary heart disease is associated with higher serum insulin levels and is seen in insulin resistant states including glucose intolerance and diabetes. This study examines the relationship between ventilatory function and insulin values, which may contribute to the association between ventilatory function and cardiovascular disease. Cross-sectional data from 1077 non-diabetic participants in the Normative Aging Study were analyzed using multiple linear regression models to control for potential confounders. Forced vital capacity (FVC) and forced expiratory volume in one second (FEV₁) were used as measures of ventilatory function and were examined in relation to fasting and post-carbohydrate challenge (PC) insulin and glucose. Insulin and glucose measurements were negatively correlated with FVC and FEV₁ (all P < 0.01). Significant negative associations between ventilatory function and measures of insulin (all P < 0.02) and glucose (all P < 0.03) persisted in separate multiple linear regression models adjusting for potential confounders including age, height, body mass index, waist to hip circumference ratio and smoking. In conclusion, negative cross-sectional associations between ventilatory function and measures of insulin and glucose were found in non-diabetic men. Insulin resistance and glucose intolerance may be mechanisms contributing to the previously unexplained association between ventilatory function impairment and cardiovascular mortality. Mechanisms underlying the relationship between insulin, glucose and decreased ventilatory function are yet to be elucidated.

2775 Active detection of obstructive lung disease in the open population: Results and economic consequences of the DIMCA programme
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Objectives: To actively detect subjects with signs and symptoms of obstructive lung disease (OLD) by means of screening and monitoring the open adult population.
Design: A randomized controlled prospective study (n = 1155 experiment, n = 535 controls).
Subjects: A random sample of the open adult population, who were not cotinine-dependent and who were able to participate in an intensive monitoring study during a maximum of 5 years.
Criteria for detection: Three sets of criteria for detection were applied: (a) Persistently low lung function (FEV₁) or increased bronchial hyperresponsiveness (PC₂₀ and reversibility) (b) Rapid decline in lung function with signs of bronchial hyperreactivity (c) Moderately increased decline in lung function or signs of bronchial hyperreactivity.
Results: A persistently low lung function (I) was found in 7.7% of the open adult population. The prevalences for criteria II and III were 12.5% and 19.4% respectively.
Ninety-five per cent of detected cases were undiagnosed prior to screening; the majority never ever visited the GP for respiratory symptoms. The total programme costs were Dfl. 245,800, equivalent to Dfl. 975 per detected case. Apart from the programme costs, active detection did not cause an increase in health care costs.
Conclusion: A large part of OLD morbidity is as yet undetected. Active detection is able to elect untreated morbidity at reasonably low costs. First indications are that detected cases benefit from treatment (clinically and statistically significant).

2776 Relationship of blood-eosinophils to level of FEV₁ in a population sample of adolescents and young adults
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Background and Aim: In order to identify potential risk factors, other than smoking, for lung function impairment, the relationship of eosinophil count, histamine responsiveness, skin test reactivity and respiratory symptoms to level of FEV₁ was studied in a population sample of 665 subjects aged 13–23 years.
Methods: Case history was obtained by interview and questionnaire. Pulmonary function, blood-eosinophils, bronchial responsiveness in inhaled histamine and skin test reactivity to common allergens were measured using standard techniques.