RISK FACTORS FOR LUNG FUNCTION IMPAIRMENT AMONG THE GENERAL NON-SMOKING KOREAN POPULATION

Myong, J-P. Yoon, H-K. Rhee, C. K. Kim, H-R. Koo, J-W

Objective: Except for tobacco smoking, risk factors for the impairment of lung function have not been widely evaluated. We evaluated the risk factors for lung function impairment among the general non-smoking Korean population.

Design: A total of 8164 non-smokers from the spirometry data set of the Korean National Health and Nutrition Examination Surveys IV and V (2008–2010) were included in the study. After sex stratification, multiple survey logistic regression analyses were performed to estimate the association between potential risk factors and impaired lung function in this nationwide cross-sectional study.

Results: The proportion of non-smokers among the general Korean population with forced expiratory volume in 1 s (FEV1) < 80% of predicted, forced vital capacity (FVC) < 80% of predicted and FEV1/FVC ratio < 0.7 were respectively 46.2%, 50.3% and 30.2%. In multiple survey logistic regression analyses, lung function impairment was associated with tuberculosis (TB) and asthma in female non-smokers and asthma in male non-smokers.

Conclusions: TB and asthma are risk factors for lung function impairment among Korean non-smokers. To prevent further lung function impairment, a careful control system for these factors should be considered when setting health policy priorities.

Keywords: asthma; respiratory function tests; risk factors; tuberculosis

LONG-TERM OUTCOMES AFTER STEPPING DOWN ASTHMA CONTROLLER MEDICATIONS: A CLAIMS-BASED, TIME-TO-EVENT ANALYSIS

Matthew A. Rank, MD; Ryan Johnson, MBA, MS; Megan Branda, MS; Jeph Herrin, PhD; Holly van Houten, BS; Michael R. Gionfriddo, PharmD; Nilay D. Shah, PhD

Background: Long-term outcomes after stepping down asthma medications are not well described.

Methods: This study was a retrospective time-to-event analysis of individuals diagnosed with asthma who stepped down their asthma controller medications using a US claims database spanning 2000 to 2012. Four-month intervals were established and a step-down event was defined by a $\geq$ 50% decrease in days-supplied of controller medications from one interval to the next; this definition is inclusive of step-down that occurred without health-care provider guidance or as a consequence of a medication adherence lapse. Asthma stability in the period prior to step-down was defined by not having an asthma exacerbation (inpatient visit, ED visit, or dispensing of a systemic corticosteroid linked to an asthma visit) and having fewer than two rescue inhaler claims in a 4-month period. The primary outcome in the period following step-down was time-to-first asthma exacerbation.

Results: Thirty-two percent of the 26,292 included individuals had an asthma exacerbation in the 24-month period following step-down of asthma controller medication, though only 7% had an ED visit or hospitalization for asthma. The length of asthma stability prior to stepping down asthma medication was strongly associated with the risk of an asthma exacerbation in the subsequent 24-month period: < 4 months' stability, 44%; 4 to 7 months, 34%; 8 to 11 months, 30%; and $\geq$ 12 months, 21% (P < .001).

Conclusions: In a large, claims-based, real-world study setting, 32% of individuals have an asthma exacerbation in the 2 years following a step-down event.

HYPOTHYROIDISM IN MDR-TB TREATMENT – RARE OCCURRENCE BUT A MAJOR CONCERN

J.S. Akshataa, R. Swapnaa, Anushree Chakrabortya,
M. Somashekarb, Shashidhar Buggi

Context: To achieve good cure rate during treatment of MDR-TB, strict adherence to treatment regimen is a must. As the second line drugs have great potential to cause adverse drug reactions (ADR), identifying these adverse reactions and treating them early is major factor in preventing default. Hypothyroidism is one such ADR caused by thioamides (ethionamide, prothionamide) and paraamino salicylic acid.

Aims: To study the frequency of occurrence of hypothyroidism and its implication in MDR-TB treatment.

Settings and Design: Retrospective analysis of 488 patients enrolled in our institute for MDR-TB treatment treated with standardised Cat IV treatment, as per RNTCP-PMDT guidelines.

Methods and Material: Retrospective analysis of 484 (4 had hypothyroidism before treatment initiation) patients treated in our institute was done. Thyroid function test was done at baseline and repeated when indicated by symptoms during clinical follow up. Patients developing hypothyroidism (defined as TSH > 10 microIU/ml) during treatment and the reasons for same are analysed. Its implication in treatment outcome is studied.

Results: Out of the 484 study population, 19 (3.9%) had at least one documented record of TSH > 10.0 microIU/ml after treatment initiation. Median time from initiation of MDR-TB treatment to development of hypothyroidism was 153 days (range 32–441 days).

Conclusions: Occurrence of hypothyroidism is rare in MDRTB treatment. But symptomatic hypothyroidism is a major factor influencing the patient compliance towards the treatment regimen. As the drugs in regimen are effective in disease treatment, the major hindrance in achieving good cure-rate is to prevent defaulters. Identifying hypothyroidism early helps to prevent default.

Keywords: Hypothyroidism; MDR-TB; Adverse drug reaction

CONCOMITANT TUBERCULOSIS AND LUNG CANCER DIAGNOSED BY BRONCHOSCOPY

Morales-García, C. Parra-Ruiz, J. Sánchez-Martínez, J. A. Delgado-Martín,
A. E. Amzouz-Amzouz, A. Hernández-Quero, J.

Objective: To describe the characteristics of concomitant tuberculosis (TB) and lung cancer cases.

DESIGN: A total of 319 TB cases diagnosed between January 2003 and December 2010 were evaluated and identified using a prospective database. During this period, samples of bronchial secretions were obtained from all patients who underwent fibreoptic bronchoscopy (FBS) as part of a TB screening programme. A descriptive study was conducted.

RESULTS: Concomitant TB and lung cancer were diagnosed in 15 cases (4.7% of total TB cases). The most common radiographic finding was atelectasis (53.3%), and the most common histological type was epidermoid carcinoma (60%). Lung cancer stage was advanced (III–IV) in 60% of the cases.

CONCLUSION: The association between TB and lung cancer found in the SGHA after implementing a TB screening programme was higher than in other studies. This suggests that it would be advisable to perform acid-fast bacilli smear and mycobacterial culture of bronchial aspirates in all patients with presumed lung cancer, particularly in high TB prevalence areas.

Keywords: Mycobacterium; coexistent lung carcinoma; malignancy; neoplasm; tuberculosis

DIFFERENT METHODS OF VENTILATION (CONTROLLING PRESSURE VS VOLUME) FOR PEOPLE WITH ACUTE RESPIRATORY FAILURE DUE TO LUNG INJURY

Myong, J-P. Yoon, H-K. Rhee, C. K. Kim, H-R. Koo, J-W

Review Question: We reviewed available evidence for the safety and efficacy of controlling pressure versus controlling volume of air delivered during mechanical ventilation in critically ill adults with acute respiratory failure due to lung injury. We found three relevant studies.

Background: Acute respiratory failure due to acute lung injury (ALI) and acute respiratory distress syndrome (ARDS) is a common reason for admission to intensive care units (ICUs) worldwide. A third to half of people with ALI/ARDS die in the ICU, in hospital or during follow-up. People with ALI/ARDS are put on ventilator machines to give the lungs time to recover. However, lung damage can worsen if the volume of air delivered by these machines is too large, or if the pressure reached in the lungs during ventilation is too high.

We wanted to know whether controlling pressure in the lung during ventilation by varying the volume of air delivered (pressure-controlled ventilation, or PCV) was better than allowing varying lung pressures when a fixed volume of air is delivered (volume-controlled ventilation, or VCV).

Study Characteristics: The three randomized trials compared PCV versus VCV in a total of 1089 adults with ALI/ARDS from 43 ICUs in five high-income countries. None of the trials were industry-funded. The evidence is current to October 2014.

Key Results: We could not be sure whether the proportions of patients who died in hospital were very different between those treated with PCV and with VCV. For every 1000 persons treated with VCV, 636 deaths were reported. On the basis of our results, we could expect to see between 210 fewer deaths and 13 more deaths with PCV. We found that effects on mortality in the ICU and on mortality at 28 days were similarly uncertain. Our results include the possibility that VCV or PCV could be better for reducing the duration of ventilation or the development of traumatic lung damage caused by ventilation (barotrauma). None of the studies provided reliable information regarding to what extent failure of other organs would be impacted by the type of ventilation, nor did they provide information on differences in infectionrisk or quality of life following discharge from intensive care.

Quality of the Evidence: The overall evidence for mortality was of moderate quality. For outcomes such as duration of ventilation, barotrauma and organ failure, evidence was limited by the small numbers studied, the different methods used in the studies or differences in reporting of results, which made interpretation difficult.

Conclusions: Available evidence is insufficient to confirm whether PCV offers any advantage over VCV in improving outcomes for people with acute lung injury on ventilatormachines. More studies including a larger number of people given PCV and VCV may provide reliable evidence on which more firm conclusions can be based.