ABSTRACTS

Using carboxymethl starch sodium solution for the treatment of children with cough variation asthma.

Zhao J, Li J.
Sichuan Da Xue Xue Bao Yi Xue Ban. 2013 Nov; 44(6):1009-11

OBJECTIVE: To analysis the clinical characteristics of children with cough variation asthma (CVA) who received treatments with Carboxymethl starch sodium solution and inhaled Glucocorticoid budesonide.
METHODS: A total of 96 children with CVA were divided into two group randomly. The control group (n = 49) received inhaled budesonide treatment (500 microg/times in 1-5 years old children, 1 mg/times and 2 times/day in 6-14 years old children over a 12 week period). The children in treatment group (n = 47) were given carboxymethl starch sodium solution (3 mL/times in 1-3 years old children, 5 mL/times in 4-7 years old children, 7 mL/times in 8-14 years old children, 3 times/day) in addition to the inhaled budesonide treatment. Observations were made on clinical therapeutic effects, cough score and the level of IgE 4 weeks, 8 weeks and 12 weeks after the treatments, respectively. Recurrence rate and adverse reactions were investigated.
RESULTS: Compared with the control group, the treatment group had significantly improved clinical characteristics after 8 weeks and 12 weeks of treatments ($P < 0.05$), and reduced cough scores after 4 weeks, 8 weeks and 12 weeks of treatments ($P< 0.05$). The IgE level of the children in the treatment group was significantly lower than the controls after 12 weeks of treatments ($P < 0.05$). The treatment group also had significantly lower recurrence rate and adverse reactions than the controls ($P < 0.05$).
CONCLUSION: Carboxymethl starch sodium solution can boost the clinical efficiency of inhaled budesonide in the treatment of children with cough variant asthma. It is safe and effectual.

Exploring the impact of elevated depressive symptoms on the ability of a tailored asthma intervention to improve medication adherence among urban adolescents with asthma.

Guglani L, Havstad SL, Ownby DR, Saltzgaber J, Johnson DA, Johnson CC, Joseph CL.
Allergy Asthma Clin Immunol. 2013; 9(1):45.

BACKGROUND: In patients with asthma, medication adherence is a voluntary behavior that can be affected by numerous factors. Depression is an important co-morbidity in adolescents with asthma that may significantly impact their controller medication adherence and other asthma-related outcomes. The modifying effect of depressive symptoms on an asthma intervention's ability to improve asthma controller medication adherence among urban adolescents with asthma has not yet been reported.
OBJECTIVE: To assess self-reported symptoms of depression as an effect modifier of the relationship between randomization group and controller medication adherence at 6-month follow-up.
METHODS: These analyses use data from a randomized controlled trial (RCT) conducted in Detroit high schools to evaluate a tailored asthma management program. The intervention included referrals to school or community resources for students reporting symptoms of depression and other issues. "Elevated depressive symptoms" was defined as a positive answer to ≥ 5 of 7 questions from a validated tool included on the baseline questionnaire. Self-reported adherence to controller medication was collected at intervention onset (session 1) and at 6-month follow up. Analyses were restricted to students with report of a controller medication

at baseline. Logistic regression was used to assess elevated depressive symptoms as an effect modifier of the relationship between randomization group and 6-month adherence.
RESULTS: Of the 422 students enrolled in the RCT, a controller medication was reported at intervention onset by n = 123 adolescents (29%). Analyzing this group, we observed an interaction between elevated depressive symptoms and adherence (p = 0.073). Stratified analysis showed better adherence in treatment group adolescents meeting criteria for elevated depressive symptoms at baseline as compared to the control group (adjusted Odds Ratio [aOR] = 9.50; p = 0.024). For adolescents without elevated depressive symptoms at baseline, differences in adherence by group assignment did not reach statistical significance (aOR 1.40, p = 0.49).
CONCLUSIONS: In this sample of students reporting controller medications at baseline, report of elevated depressive symptoms at baseline and randomization to the intervention group was associated with significantly better adherence at 6-month follow up when compared to that of a control group. Larger studies are needed to evaluate the impact of depression on the relationship between adherence and asthma intervention effectiveness.

Lung nodule detection in a high-risk population: Comparison of magnetic resonance imaging and low-dose computed tomography.

Sommer G, Tremper J, Koenigkam-Santos M, Delorme S, Becker N, Biederer J et al..
Eur J Radiol. 2013 Dec 4. pii: S0720-048X(13)00602-5. doi: 10.1016/j.ejrad.2013.11.012.

OBJECTIVE: To investigate the potential of MRI for lung nodule detection in a high-risk population in comparison to low-dose CT.
METHODS: 49 participants (31 men, 18 women, 51-71 years) of the German Lung Cancer Screening and Intervention Trial (LUSI) with a cancer-suspicious lung lesion in CT were examined with non-contrast-enhanced MRI of the lung at 1.5T. Data were pseudonymized and presented at random order together with 30 datasets (23 in men, 7 in women, 18-64 years) from healthy volunteers. Two radiologists read the data for the presence of nodules. Sensitivity and specificity were calculated. Gold standard was either histology or long-term follow-up. Contrast-to-Noise-Ratio (CNR) was measured for all detected lesions in all MRI sequences.
RESULTS: Average maximum diameter of the lesions was 15mm. Overall sensitivity and specificity of MRI were 48% (26/54) and 88% (29/33) compared to low-dose CT. Sensitivity of MRI was significantly higher for malignant nodules (78% (12.5/16)) than for benign ones (36% (13.5/38); P=0.007). There was no statistically significant difference in sensitivity between nodules (benign and malignant) larger or smaller than 10mm (P=0.7). Inter observer agreement was 84% (κ=0.65). Lesion-to-background CNR of T2-weighted single-shot turbo-spin-echo was significantly higher for malignant nodules (89±27) than for benign ones (56±23; P=0.002).
CONCLUSION: The sensitivity of MRI for detection of malignant pulmonary nodules in a high-risk population is 78%. Due to its inherent soft tissue contrast, MRI is more sensitive to malignant nodules than to benign ones. MRI may therefore represent a useful test for early detection of lung cancer.

Association between Anemia and COPD in Iranian Population.

Zavarreh RH, Zahmatkesh MM, Vakili M, Shahriari-Ahmadi A, Zohal MA, Arabi M, et al.
Int J Hematol Oncol Stem Cell Res. 2013;7(2):6-10.

BACKGROUND AND AIM: Chronic obstructive pulmonary disease (COPD) is one of the major causes of morbidity and mortality in adults. Anemia is known as comorbidity in many chronic

diseases that can increase morbidity and mortality of COPD. Recent studies have shown that anemia may be more prevalent than expected in COPD patients and can increase disabilities of COPD. In this study we have evaluated the correlation between anemia and the severity of COPD in patients referred to teaching hospitals of the Tehran University of Medical Sciences (TUMS), Tehran, Iran.
MATERIALS AND METHODS: In this cross-sectional study the severity of COPD in 760 patients with dyspnea who referred to teaching hospitals of Tehran University of Medical Sciences and 96 stable COPD patients were categorize using a GOLD criteria from mild to moderate, severe and very severe. Anemia was determined as hemoglobin <13 g/dL in men and <12 g/dL in women, respectively. Demographic characteristics, spirometry parameters and laboratory findings were compared between anemic and non-anemic groups using Student t-test and regression tests (SPSS v.18 software).
RESULTS: The Mean age of patients was 65 ± 13.07 years (59.4% male). Overall prevalence of anemia was 27% and there was no correlation between severity of COPD and anemia. Anemic patients were significantly older than non-anemic patients (71.1 ± 8.5 years vs. 65.4± 12.8 years; p = 0.030). RBC count of anemic patients were significantly lower than non-anemic group (4.3 ± 0.5 vs. 5.02± 0.8 ×106/µL; p < 0.001). Erythropoietin levels in anemic group was significantly higher than non-anemic group (16.33±2.43 vs. 10.22 ± 2.67 mu/ml; p < 0.001) and there was a significant inverse correlation of hemoglobin vs erythropoietin (r= -0.8).
CONCLUSION: There was a high prevalence of anemia in COPD patients. Anemia can increase disabilities of COPD. Thus, treatment of anemia may improve quality of life in these patients. Further comprehensive studies are needed for determination of exact prevalence of anemia and its physiologic effects in COPD

The effect of intravenous interferon-beta-1a (FP-1201) on lung CD73 expression and on acute respiratory distress syndrome mortality: an open-label study.

Bellingan G, Maksimow M, Howell DC, Stotz M, Beale R, Beatty M, et al.
Lancet Respir Med. 2014 Feb;2(2):98-107. doi: 10.1016/S2213-2600(13)70259-5. Epub 2013 Dec 23.

BACKGROUND: Pulmonary vascular leakage occurs early in acute respiratory distress syndrome (ARDS). Mortality is high (35-45%), but no effective pharmacotherapy exists. Production of anti-inflammatory adenosine by ecto-5'-nucleotidase (CD73) helps maintain endothelial barrier function. We tested whether interferon-beta-1a (IFN-beta-1a), which increases CD73 synthesis, can reduce vascular leakage and mortality in patients with ARDS.
METHODS: In ex-vivo studies, we first established that IFN-beta-1a induced CD73 up-regulation in cultured human lung tissue samples. We then tested the safety, tolerability, and efficacy of intravenous human recombinant IFN-beta-1a (FP-1201) in patients with ARDS in an open-label study (comprising dose-escalation and expansion phases). We recruited patients from eight intensive care units in the UK. Eligible patients were aged 18 years or older, had ARDS, and were being treated with assisted ventilation. We established an optimal tolerated dose (OTD) in the first, dose-escalation phase. Once established, we gave all subsequently enrolled patients the OTD of intravenous FP-1201 for 6 days. We assessed 28-day mortality (our primary endpoint) in all patients receiving the OTD versus 28-day mortality in a group of patients who did not receive treatment (this control group comprised patients in the study but who did not receive treatment because they were screened during the safety windows after dose escalation). This trial is registered with ClinicalTrials.gov, number NCT00789685, and the EU Clinical Trials Register EudraCT, number 2008-000140-13.
FINDINGS: IFN-beta-1a increased the number of CD73-positive vessels in lung culture by four times on day 1 (p=0·04) and by 14·3 times by day 4 (p=0·004). For the clinical trial, between

Feb 23, 2009, and April 7, 2011, we identified 150 patients, of whom 37 were enrolled into the trial and given treatment. The control group consisted of 59 patients who were recruited to take part in the study, but who did not receive treatment. Demographic characteristics and severity of illness did not differ between treatment and control groups. The optimal tolerated FP-1201 dose was 10 μg per day for 6 days. By day 28, 3 (8%) of 37 patients in the treatment cohort and 19 (32%) of 59 patients in the control cohort had died-thus, treatment with FP-1201 was associated with an 81% reduction in odds of 28-day mortality (odds ratio 0·19 [95% CI 0·03-0·72]; p=0·01).
INTERPRETATION: FP-1201 up-regulates human lung CD73 expression, and is associated with a reduction in 28-day mortality in patients with ARDS. Our findings need to be substantiated in large, prospective randomised trials, but suggest that FP-1201 could be the first effective, mechanistically targeted, disease-specific pharmacotherapy for patients with ARDS.

Extent of delay in diagnosis in new smear positive patients of pulmonary tuberculosis attending tertiary care hospital.

Behera BK, Jain RB, Gupta KB, Goel MK.
Int J Prev Med. 2013 Dec;4(12):1480-5.

BACKGROUND: India is the highest tuberculosis (TB) burden country accounting for one-fifth of the global incidence. It is estimated that, annually, 1.9 million cases are from India and about 0.8 million are infectious, new smear, positive pulmonary TB cases. The present study was a cross-sectional study conducted in a tertiary care hospital to determine the extent of delay in diagnosis and initiating the treatment after diagnosis in new smear, positive pulmonary TB patients attending a tertiary care hospital of Haryana during a 1-year period.
METHODS: A total of 204 patients were interviewed after being diagnosed as new sputum, positive TB (NSP-TB) by the treating doctor at the tertiary care hospital and re-interviewed at their home after initiation of anti-TB treatment. Chi-square test and analysis of variance (ANOVA) were used for statistical analysis.
RESULTS: More than half of the study patients delayed their first consultation with a health care system. The mean and median patient delay was 32.97 and 16 days, respectively. Lack of awareness of the disease was the leading cause for the patient delay. The mean duration of delay at peripheral health care provider was 60.46 days. The mean and median delay at tertiary care hospital was 8.35 and 4 days, respectively. Most of the patients delayed for diagnosis as per revised national TB control program (RNTCP) guidelines. The mean total delay in diagnosis was 75.71 days.
CONCLUSIONS: There is an urgent need to scale up the information education communication activities to decrease the patient delay. Doctor at all level of health care need to be actively involved for subjecting the suspects to sputum examination at the earliest possible, as per RNTCP guidelines.

Reduction in oral corticosteroid use in patients receiving omalizumab for allergic asthma in the real-world setting.

Braunstahl GJ, Chlumský J, Peachey G, Chen CW.
Allergy Asthma Clin Immunol. 2013 Dec 4;9(1):47.

BACKGROUND: Oral corticosteroids (OCS) are commonly administered in patients with severe persistent allergic asthma. Despite their efficacy, they are associated with a wide variety of adverse events. The experience registry was set up to investigate real-world outcomes among

patients receiving omalizumab for the treatment of uncontrolled allergic asthma. Here, we present the effect of omalizumab treatment on OCS use.
METHODS: Experience was a 2-year, multinational, non-interventional, observational registry of patients receiving omalizumab for uncontrolled allergic asthma. OCS use (proportion of patients on maintenance OCS, mean total daily OCS dose and change in status of OCS therapy) was assessed at baseline, 16 weeks, and 8, 12, 18, and 24 months after the initiation of omalizumab. Response to omalizumab was assessed using the physician's Global Evaluation of Treatment Effectiveness (GETE) at approximately Week 16. Safety data were also recorded.
RESULTS: A total of 943 patients (mean age, 45 years; female, 64.9%) were enrolled in the registry, 263 of whom were receiving maintenance OCS at baseline. The proportion of patients taking maintenance OCS was markedly lower at Months 12 (16.1%) and 24 (14.2%) than at baseline (28.6%; intent-to-treat population). GETE status was determined in 915 patients receiving omalizumab: 64.2% were responders (excellent or good response), 30.7% were non-responders (moderate, poor or worsening response); 5.1% had no assessment. The frequency of serious adverse events was comparable to that seen in controlled trials of omalizumab.
CONCLUSIONS: Omalizumab use is associated with an OCS-sparing effect in patients with uncontrolled persistent allergic asthma in the real-world setting.

D-Dimer to rule out pulmonary embolism in renal insufficiency.

Lindner G, Funk GC, Pfortmueller CA, Leichtle AB, Fiedler GM, Schwarz C, et al.
Am J Med. 2013 Dec 16. pii: S0002-9343(13)01071-1. doi: 10.1016/j.amjmed.2013.12.003. [Epub ahead of print]

BACKGROUND: D-Dimer levels are often elevated in renal insufficiency. The diagnostic accuracy of D-Dimer to rule out pulmonary embolism in patients with renal insufficiency is unclear.
METHODS: We evaluated the data of patients presenting to our emergency department and receiving computed tomography angiography (CTA) to rule out pulmonary embolism with measurement of D-Dimer and creatinine. Glomerular filtration rate was calculated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) formula.
RESULTS: 1,305 patients were included. 1,067 (82%) had an eGFR exceeding 60 ml/min, 209 (16%) 30-60 ml/min and 29 (2%) <30 ml/min. 152 patients (12%) had D-Dimer below 500 µg/L. eGFR (R= -0.1122) correlated significantly with D-Dimer (p<0.0001). 169 patients (13%) were found to have pulmonary embolism. Sensitivity of D-Dimer for patients with an eGFR>60 ml/min was 96% (0.93 to 0.99) and 100% (100 to 100) for those with 30-60 ml/min, while specificity declined significantly with impaired renal function. AUC of the ROC for D-Dimer was 0.734 in patients with an eGFR of > 60 ml/min and 0.673 for 30-60 ml/min.
CONCLUSIONS: D-Dimer levels were elevated in patients with an eGFR<60 ml/min, but proved to be highly sensitive for the exclusion of pulmonary embolism. However, since almost all patients with impaired renal function had elevated D-Dimer irrespective of the presence of pulmonary embolism studies should be performed to determine renal function adjusted D-Dimer cut-offs.