(A) Policy Statement

The approved procedure for challenge tests will be followed by all Pulmonary Function staff members. The procedure is based on The American Thoracic Society Guidelines.

(B) Purpose of Policy

1. To standardize the testing procedure, thereby providing the greatest possible accuracy and reproducibility of test results.
2. Methacholine is used to assist in making a positive diagnosis of asthma as well as documenting severity and following changes.
3. To confirm a diagnosis of bronchial hyper-reactivity in subjects who do not have clinically apparent asthma (FEV1 of at least 70% predicted value) yet do have chronic cough, recurrent respiratory infection and history of wheezing with objective clinical documentation.

(C) Procedure

Patient Preparation

1. Power, warm up and calibrate Pulmonary Function Testing system.

2. Gather material needed: Special methacholine administration kit; properly labeled dosages of methacholine from Pharmacy. Source of pressurized oxygen. Albuterol unit dose with an updraft nebulizer. Review and confirm physician’s order. Order should be Pulmonary Function Test 1. Maintain appropriate infection control maneuvers.

3. Pharmacy will mix the solution in the following concentrations: 0.025 mg/ml, 0.25 mg/ml, 2.5 mg/ml, 10.0 mg/ml, and 25 mg/ml. They will be labeled according to Pharmacy policy.

4. Reconcile current patient medications. If they include any of the medications listed in Appendix I and have not been held for the recommended interval, inform the patient’s physician. Explain that such drugs may interfere with the challenge and possibly reschedule test. Smoking and drinking cola or chocolate beverages should be refrained from at least 6 hours prior to testing. Exercise and exposure to cold air should be avoided for at least 2 hours before test.

5. Educate patient regarding testing procedure.
Testing Procedure

1. Verify Patient Consent form, according to policy #3364-7-10-01
2. Perform methacholine challenge testing according to Appendix II

Contraindications

1. Baseline pulmonary function tests with FEV1 less than 1-1.5 liters or less than 70% of the predicted values.
2. Patients with known hypersensitivity to methacholine or other parasympathomimetic agents.
3. Repeated administration of Provocholine other than on the day that a patient undergoes challenge of increasing doses.
4. Patients receiving beta-adrenergic blocking agent which can cause a prolonged and exaggerated response to methacholine Cl as well as interfering with accepted modalities of treatment.
5. Pregnancy or nursing mothers.
6. Children below 5 years of age.

Precautions

1. Females of childbearing age: challenge should be performed either within ten days following the onset of menses or within two weeks of a negative pregnancy test.
2. Active infectious disease.
3. Cardiovascular disease with bradycardia.
4. Vagotonia
5. Peptic ulcer disease
6. Epilepsy
7. Thyroid disease
8. Urinary tract obstruction
9. Symptomatic coronary artery disease
10. History of MI
11. CHF
12. Renal/liver failure
13. Documented psychiatric disease
14. Inability to understand the procedure (in the opinion of the MD requesting the test)
15. Serious illness
16. Systolic B/P >170 or <100
17. Diastolic B/P >110 or <60

Possible Side Effects

1. Chest tightness
2. Mild cough
3. Mild wheezing
4. Dizziness, lightheadedness and chest pain associated with spirometry maneuver
Reference:

Approved by:
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Review/Revision Completed By:
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Policies Superseded by This Policy:
It is the responsibility of the reader to verify with the responsible agent that this is the most current version of the policy.