GUIDELINES

"PREOPERATIVE ADULT PATIENT EVALUATION FOR ELECTIVE SYRGERY"

G. Kostopanagiotou and colleagues

Preoperative assessment is obligatory for all patients who undergo any type of anaesthesia, general, sedation or locoregional, in a hospital (private and public) or office-based, according to the Greek Law (1044/1997, on "safety in anaesthesia").

Required preoperative laboratory tests is sometimes a point of conflict, given that the cost-benefit relationship has not been clarified. It is well known that a detailed review of the medical record as well as a thorough clinical examination is still the best means of preoperative screening. Every laboratory test other than routine preoperative testing (ECG, chest X-ray, blood count, coagulation studies, glucose, urea, creatinine levels and electrolytes –if renal dysfunction exists) is considered only on specific indication, in collaboration with the patient’s surgeon (“to be considered”).

The preoperative evaluation takes place:

i. For outpatients or patients able to ambulate in the office.

ii. For very sick patients or those unable to ambulate in a bedside manner.

iii. For day surgery cases on the day of the procedure.

1. Outpatients for day surgery procedures
Outpatients for day surgery procedures arrive on the day of surgery following the instructions given by the doctor, with the Questionnaire form (table 1) and the routine laboratory tests (table 2) already completed.

2. Obligatory laboratory tests for moderately to significantly invasive procedures
Laboratory testing for inpatients who are scheduled for moderate to high risk surgical procedures is illustrated on table 3.
Table 1. Questionnaire form of preoperative evaluation for day surgery procedures in outpatients.

| Date: / / |

| Questionnaire form of preoperative evaluation for day surgery procedures in outpatients. |
| *It is completed on the responsibility of the patient* |

**Patient Data**
- Pt No: __________ Case Code: _______ Date of Surgery __________
- Surname: __________________________ Name: ____________
- Name of accompanying person: ________________ Tel no: ____________
- (If the questionnaire is completed by the accompanying person)
- Age: _____ Height: _____ Weight: _____ Employment: ________________________________
- Type of Surgery: ________________________________
- Surgeon’s name: ____________________________ Ward: ____________

Do you suffer (or used to) from one of the following medical problems? If the answer is yes, please explain on the dotted area.

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With how many cushions do you sleep at night? ________________________________

How many stairs can you climb? ________________________________

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☐ □ Coagulation problems (easy bruising, hemophilia, platelet disorders, other)  
☐ □ anemia  
☐ □ mediterranean anemia  
☐ □ anemia falciformis

----------------------------------------
YES NO
☐ □ CEREBRAL DISEASE (cerebrovascular disease, convulsions, epilepsy, headache other) (if yes, underline accordingly)

----------------------------------------
YES NO
☐ □ THYROID DISEASE

----------------------------------------
YES NO
☐ □ NEOPLASIA/CANCER
Type_____________________________________________________
Chemiotherapy_________________________________________ year _____
Radiotherapy ______________________________________ year _____

----------------------------------------
YES NO
☐ □ Are you sick or have you been sick recently? (cold, sore throat, coughing, fever, influenza, other) (if yes, underline accordingly)

----------------------------------------
YES NO
☐ □ did you receive corticosteroids the last 12 months? (cortisone, prednisone, dexamethazone)

----------------------------------------
YES NO
☐ □ OTHER MEDICAL PROBLEMS (please explain)

------------------------------------------------------------------------------------------------------------------
YES NO
☐ □ do you have artificial dentures, mobile teeth or prosthesis?  
☐ □ do you have trouble opening your mouth, swallowing or breathing at night?

----------------------------------------
YES NO
☐ □ SMOKING
How many years did you smoke? ____________ How many packs/day?= ____________
☐ □ Did you smoke in the past? ___________________________________________

----------------------------------------
YES NO
☐ □ Do you consume alcohol often? (at least once a week)
How many glasses / day? Wine _______ Beer ______ other_____________________

----------------------------------------
YES NO
☐ □ Do you make use of recreational drugs?

----------------------------------------
YES NO
☐ □ Do you, or a relative suffer from myasthenia gravis?

----------------------------------------
YES NO
☐ □ Did you or a relative ever suffer from an anaesthesia-related problem?  
If yes, how? ___________________________________________

----------------------------------------
YES NO
☐ □ Did you suffer from any reaction to topical anaesthesia at the Dentist's office?  
If yes, how? ___________________________________________
YES  NO
☐       ☐  Do you receive medication?
If yes, complete the medication and dosage (aspirin included)
________________________________________________________________________
________________________________________________________________________
---------------------------------------------------------------------------
YES  NO
☐       ☐  Did you ever manifest an allergic reaction to drugs or foods? If yes to what?
What kind of allergic reaction? ____________________________________________
---------------------------------------------------------------------------
YES  NO
☐       ☐  Have you undertaken any surgical procedure in the past? (if yes please complete type
and date)
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Data of the person completing this form
Name.......................................................... Signature........................

Table 2. Routine Laboratory testing for outpatients on Day Surgery procedures.

1. ECG with a written diagnosis from a cardiologist. If the patients is at low risk for cardiac disease and for stable patients even prior to 3 months.
2. Blood tests: complete blood count, coagulation studies, glucose, urea, creatinine, K, Na (to be undertaken within the last 10 days).
3. If thyroid disease: thyroid hormones of the last trimester.
4. Cardiac patients: If on pacemaker or defibrillator to bring the device’s documentation and a consultation of a recent cardiac control. If on antiplatelet or anticoagulant medication to follow accurately the doctor’s orders for modifications on drugs or dosage in order to undertake surgery. If the patient has undertaken heart surgery or any invasive procedure to bring a copy of his medical record.

Table 3. Laboratory test for patients who are scheduled for Intermediate or High Risk procedures.

1. ECG with a written diagnosis from a cardiologist. If the patients is at low risk for cardiac disease and for stable patients even before 3 months.
2. ☐ Chest X-Ray and in patients who are scheduled for a procedure of the neck or thyroid or who have previously undertaken a procedure in the neck or with a predicted difficult airway an X ray of the neck (A-P and LATERAL views)
3. Blood typing (group, Rh) and cross-matching of the required pRBC.
4. Complete blood count
5. Coagulation studies (PT/INR, APTT, fibrinogen)
6. Biochemical tests (glucose, urea, creatinine, K, Na, SGOT, SGPT, bilirubin)
When is expert's consultation ordered?

Expert's consultation is given by a specialized doctor of the hospital of the corresponding or near area of specialization (i.e. general pathologist in the absence of a cardiologist, endocrinologist, nephrologist, or pneumologist etc)

In case of an outpatient or a patient who will undergo elective surgery or any medical action requiring anaesthesia/sedation the laboratory tests as well as expert's consultation might be performed by a doctor of the corresponding specialization unrelated to the hospital or belonging to the patients' insurance company. In the expert's consultation there should be clearly written the date of the exam, the experts data as well as telephone number and must have taken place the last trimester. The anaesthesiologist responsible for the patients' anaesthesia can order additional exams if necessary.

Specifically:

1. CARDIOLOGIC CONSULTATION

Routine preoperative examination includes ECG with a written diagnosis from a cardiologist. The patient is referenced for a cardiologic consultation if he falls in one of the following categories (table 4)

Table 4. Cardiologic consultation is required in the following cases.

<table>
<thead>
<tr>
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<th>Positive medical history for cardiac disease (history of myocardial infarction, cerebro-vascular disease, angina pectoris, cardiomyopathy, pulmonary hypertension, cardiac valvular disease, rhythm disturbances, cardiac murmurs, syncopic episodes, congenital disorders or disorders that can involve the cardiovascular system).</th>
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<tbody>
<tr>
<td>2.</td>
<td>Abnormal findings in the ECG</td>
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<tr>
<td>3.</td>
<td>Malignant hypertension</td>
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<td>4.</td>
<td>Medical history elements who can conceal cardiac disease (unexplained dyspnea, oedema of the lower extremities etc)</td>
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<tr>
<td>5.</td>
<td>Children or young adults with history of syncope or sudden loss of consciousness</td>
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<td>6.</td>
<td>History of alcohol or drug abuse</td>
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<td>7.</td>
<td>Chronic respiratory disease (heavy smokers, emphysema, asthma, COPD)</td>
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<td>8.</td>
<td>Congenital disorders and abnormalitites</td>
</tr>
<tr>
<td>9.</td>
<td>Morbidly obese patients (BMI &gt;42)</td>
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<tr>
<td>10.</td>
<td>Pregnant women after the 4th month of pregnancy</td>
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<td>11.</td>
<td>Professional athletes (possible use of anabolic drugs)</td>
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</table>
12. Diabetic or other metabolic disorder patients, patients with connective tissue disorders or patients with serious infections
13. Multiple trauma or thoracic trauma patients
14. Patients receiving cardiotoxic medication-cancer patients receiving chemotherapy (i.e. adriamycin).
15. Transplant recipients chronically receiving immunosuppressive drugs
16. Patients who have received a cardiac surgical procedure or angioplasty.
17. Every patient who is scheduled to receive a vascular or cardiothoracic or neurosurgical procedure or any other high risk surgery.

Note:

(a) Patients with an implanted pacemaker or defibrillator must bring the device’s documentation, whereas patients with a history of cardiac surgical procedure or angioplasty must bring their full medical record.

(b) Patients receiving antiplatelet and anticoagulant drugs must obtain written detailed orders on their perioperative management. Careful attention must be addressed in patients with a history of drug-eluting stent placement.

(c) Specific Cardiac Diagnostic and Laboratory testing is obtained with the cardiologists’ or cardiothoracic surgeon’s order ((U/S, TEE, coronaryography, stress test, BNP, TnT)

(d) Preoperative U/S is useful for the anaesthesiologist and may be ordered in the following cases:
   (1) aortic or mitral valve stenosis or insufficiency
   (2) severe left ventricular dysfunction
   (3) left bundle branch block
   (4) cardiomegaly (>60% of the cardiothoracic index) at the CXR
   (5) history of cardiac insufficiency, cardiomyopathy, severe unexplained dyspnea
   (6) history of cardiotoxic drug intake (i.e. adriamycin)
   (7) presence of cardiac murmurs.

2. PNEUMONOLOGIC CONSULTATION is required in the following cases (table 5)

Table 5. Experts consultation is required in patients who fall in one of the following categories

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<td>1</td>
<td>Age &gt;70 years</td>
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<td>Heavy smokers</td>
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<tr>
<td>3</td>
<td>Morbidly obese (BMI &gt;42)</td>
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<td>4</td>
<td>Cardiothoracic surgical procedure</td>
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<td>5</td>
<td>History of asthma</td>
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<td>6</td>
<td>History of COPD</td>
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<td>7</td>
<td>Sleep apnea syndrome</td>
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<td>8</td>
<td>Any other known respiratory disease (interstitial pneumopathy, cyphoscoliosis, tuberculosis, professional lung disease, bronchiectasias, respiratory insufficiency, systemic disorders who involve the respiratory tract).</td>
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<td>9</td>
<td>Patients with recent respiratory infection, or recurrent respiratory infections.</td>
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<td>10</td>
<td>Patients with positive symptoms or signs from the respiratory tract (tachypnea, dyspnea, cyanosis).</td>
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<td>11</td>
<td>Abnormal CXR findings</td>
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<td>12</td>
<td>Long duration of the scheduled surgical procedure (&gt; 4 hours)</td>
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3. HEMATOLOGIC CONSULTATION
All patients suffering from a known haematologic acute or chronic disorder, unexplained bleeding, thrombo-embolic episode or patients with suspicious medical history for a haematologic disorder (cancer patients, presence of haematomas, petechiae, pulmonary emboli, cerebro-vascular disease), in pregnant women with preeclampsia, or patients with an abnormal blood count or coagulation studies.

4. ENDOCRINOLOGIC CONSULTATION
Is necessary in patients with known endocrinological disorder with or without drug intake, patients with chronic corticosteroid consumption (transplant recipients, connective tissue disorders, autoimmune disorders etc), after surgery of the thyroid, adrenal or pituitary gland or with symptoms and signs of endocrine disease. All patients suffering from pheochromocytoma or M.E.N. syndrome are being subjected to an endocrinologic consult prior to surgery.

Which are the obligatory hormone exams?

**Thyroid disease**
T₃, T₄, TSH plasma levels: can be accepted if measured within 3 months from surgery (and if the subject is clinically euthyroid). In cases of hypoalbuminaemia, pregnancy or intake of certain drugs (i.e. corticosteroids) there are additionally measured the free fraction of the hormones (fT₃, fT₄). If the patient receives thyroxine medication, he should postpone the drug assumption until after the blood withdrawal. If the drug dosage has been recently changed it is desirable to measure the hormone plasma levels after the adjustment of the drug dosage.

**Adrenal disease**
Cortisol and ACTH plasma levels.
If required full control of the hypothalamic-pituitary-adrenal axis after the endocrinologists consultation.

**Diabetes Mellitus**
Desirable perioperative blood glucose levels are: 150-200 mg/dL (for non diabetic patients: 70-120 mg/dL).

5. NEPHROLOGIC CONSULTATION
In patients with abnormal blood levels of creatinine (male adults >1.7 and female>1.6), after prolonged hypotension or shock, renal transplant recipients, patients on dialysis (haemodialysis, peritoneal dialysis, haemofiltration), pregnant women with preeclampsia or subjects with suspicion for renal disease (electrolyte disturbances, diabetic patients, with autoimmune or connective tissue disease, urinary tract infection and renal cancer etc)

6. NEUROLOGIC CONSULTATION
Patients with known acute or chronic neurologic disease, with or without antiepileptic or antiparkinsonian or other neurologic drug intake or pregnant women with preeclampsia, patients with medical history of head and neck
trauma or history of previous neurosurgical procedure, patients suffering from serious and prolonged headache or abnormal findings in a CT, MRI scan or the EEG.

7. PSYCHIATRIC CONSULTATION
Patients with known acute or chronic psychiatric disorder, or with serious behavior disorders.

8. IMMUNOLOGIC CONSULTATION
Patients with known serious drug or food allergy in which the allergy manifestations include: anaphylaxia, urticaria, rhinitis or rash.

9. DENTAL CONSULTATION
It is obligatory in patients who are scheduled for cardiothoracic surgical procedure, organ transplantation, in diabetic patients or patients with mobile or destroyed teeth.

Sources of electronic information:
www.agreecollaboration.org
www.nice.org.uk
www.euroanesthesia.org/education/guidelines
http://www.asahq.org/publicationsAndServices/sgstoc.htm