A SIMPLIFIED SYSTEMATIC APPROACH TOWARDS PHYSIOTHERAPEUTIC CARDIORESPIRATORY ASSESSMENT

Abstract

Assessment is an integral process of the treatment. In this chapter, a comprehensive assessment approach towards cardiorespiratory is given in order to necessary for the good quality of assessment in order to proceed with the treatment. On reading this chapter, the readers will be able to understand the physiotherapeutic approach towards the cardiorespiratory assessment and thus it will influence the good decision making. However the given content is a generalised approach towards assessment and it doesn't direct towards any specific diseases.

Author

Dr R.Sedhunivas M.P.T.
Cardio
Assistant Professor
School of Health Sciences,
Department of Physiotherapy
Bangalore

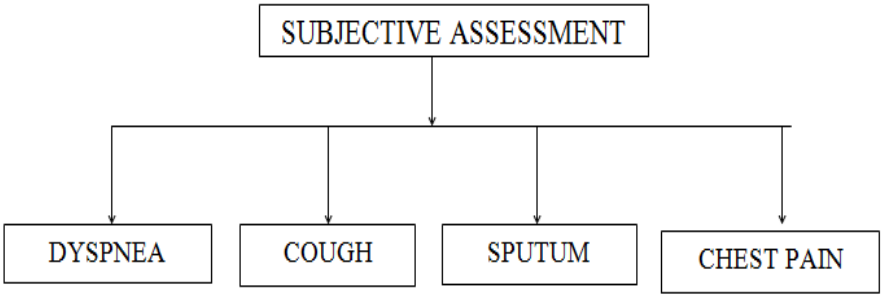
Proper diagnoses aids in a proper treatment and thereby cure of a patient. Wrong diagnosis is proven fatal sometimes also and it denotes the poor assessment standards of the physiotherapists. Though a medical diagnosis has been already made by the cardiopulmonary doctor and other medical teams, it is also important to assess in term of physiotherapeutic need problems.

In physiotherapy field,the cardiorespiratory assessment is different from the other assessment provided because interpretation of a multiple investigations are necessary since the cardiopulmonary conditions mimic the same in the cases of symptoms like dyspnoea,chest pain,cough, sputum etc. and sometimes it has to be assessed in a series from the early stage of disease or day by day before and after surgery.Every assessment differs because; it will be done under various settings like intensivecare unit, bed side inpatient rehab, outpatient rehab setup where the entire goal setting for the patient differs.

As you collect the demographic data, the patients can be asked for the chief compliant .The primary chief compliant will be the chest pain on activity in cases of stable angina,where dyspnoea on exertion will be a key factor in pulmonary cases and difficulty in performing the ADL's like stair climbing,unable to lift weights and difficulty inwalking in advance cases also. They would have experienced frequent night sweats also.And chief complaints should always be documented on lament terms inorder to get the patients exact nature of their inabilities.

I. SUBJECTIVE ASSESSMENT

Subjective assessment consists of assessing in details of patient chief complaints and documenting with the help of certain valid scales.So the commonest scales used in the assessment are NYHA scale,Borg scale of dyspnoea and angina grading scale.



A tip here is in each and every subjective assessment of patient complaints and symptoms should be assessed in sequence of frequency,mode of onset,aggravating and relieving factors,quality, and frequency also

Cough and sputum assessment is vital in cases of pulmonaryconditions where the colour and quantity, consistency of sputum is hint factor of the problems hiding inside. However it should be confirmed with other investigations like chest x-ray and chest CT.

In cases of chest pain,it should be assessed with onset,aggravating factor, relieving factors,frequency and number of episodes of recurrence and assessed objectively with angina scale.

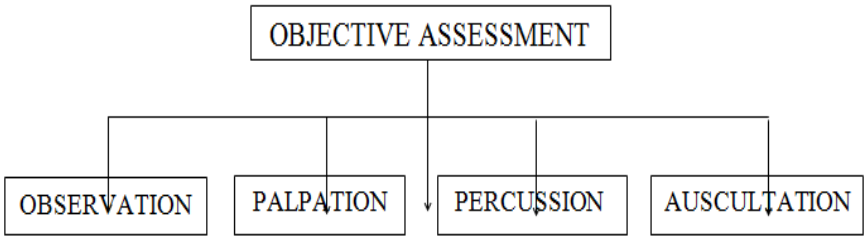
Apart from these assessments,a detailed history collection of past history including past medical history and existing comorbidities like diabetes mellitus and hypertension/hypotension also along with its medical management is necessary.

Understanding about the family history can give a link about hereditary linked diseases like bronchial asthma and whereas the personal history of smoking and alcohol abuse gives the details of detrition of the pulmonary function also. Occupational environment has to be noted for correlation and exposure to hazards which can deteoriate the pulmonary function and cause the occupational lung disorders like pneumoconiosis, asbestosis etc.

II. OBJECTIVE ASSESSMENT

Objective assessment is done to correlate with patients symptoms, though we would have arrived at appropriate hypothesis,based on subjective complaints and to confirm the final diagnosis. Though the final diagnosis may be written in clinical terms, it has been written in term of problem list, with primary problems listed at the top.

Vitals assessment is vital where we measure the subject's heart rate and resting blood pressure and oxygen saturation status usinga pulse oximeter.



In observation, it will be about the appearance of the patient in the therapists perspective,in terms of body built, external appliances and conscious level of the patient and chest deformities if any.in external appliances it has to include starting from basic intravenous lines till Foley's catheter and ECG leads and internal costal drainage tubes and much more and even suture dressings also. The type of breathing has to be noted whether it is abdominothoracic or thoracoabdominal since major involvement of thoracoabdominal breathing pattern signifies the involvement of accessory muscles of inspiration and most commonly seen in COPD patients. While examining in the extremities features of cyanosis and clubbing can be noted,where clubbing indicates chronic hypoxemia,commonly seen in smokers,where nail loses it shape and has a parrot beak appearance

In palpation, we can objectively measure about the symmetry of the chest at various levels like apical, posterior, and lateral. It is done by placing palmar surface over the chest and asking the subject to breathe in and out normally and observing the pattern of movement of thoracic cavity. Next, the tracheal position has to be observed in critical patient at the suprasternal notch most importantly,it can denote the underlying lung pathology like pleural

effusion or pneumothorax,where the tracheal position is shifted towards the opposite side.

Tactile fremitus indicates the collection of secretions inside the thoracic cavity and it is evaluated by examiners palm over the subject chest and the subject is asked to repeat the vowel sound and the sound quality is observed on both sides. The side retention of the secretions will have more vocal sound than the normal side. Chest expansion is the measure of compliance of the thorax and it is assessed by a simple tape measure around the chest and asking subject to deep breath

Percussion assessment is the resonance of air inside the lungs. And we can relate this with water in a tank. Tank containing water will be less resonant,compared to the empty tank when percussed. So it is important to assess in cases of hydrothorax and haemo thorax where resonance is dull .percussion is done by taping over the middle finger over the other middle finger by the examiner keeping his hand on the intercostal space on the thoracic cavity and observing for dull, normal or hype resonance in chest cavity.

Auscultation is another method of assessing the secretions in the lungs. Basically a good medical stethoscope is used to assess and it has to observe lobe by lobe of the upper, middle and lower zone of the lungs. Heart sounds are assessed for the functioning of the valves mainly over the apex beat area on 5^{th} intercostal area for bicuspid valve and xiphisternal area for the tricuspid valve. Aortic and pulmonary valves are assessed in the area of the 2^{nd} intercostal on either side of sternum.

An assessment is never been complete ,until there is been a final physiotherapeutic diagnosis and along with the summary of list of problems and proposed set of treatment protocol personalised for the patient and at last the follow up is necessary to ensure the proper delivery of therapy and recovery of the patient.

On conclusion note, cardio respiratory assessment is a wider one which covers multiple investigations to correlate with patient symptoms along with simple field test like six minute walk test and disease specific questionnaires also to arrive at a proper final diagnosis.

