

Module no. 13 Cardio Vascular System

Approach to Common Symptoms: Symptom approach

In the present module the medical officer will be introduced to the common symptoms and their evaluation in the elderly. The symptoms to be discussed include: Fever, headache, pain, dizziness, fatigue, insomnia, pruritis and systemic symptoms like dyspnoea or breathlessness, cough, vomiting, bleeding per rectum and seizures.

Learning objectives:

At the end of this module, the medical officer will know how to:

1. Approach an elderly patient with these symptoms
2. Identify the acuteness of the symptoms
3. Provide symptomatic relief in both acute and chronic situations
4. Prepare a plan of management depending on the severity
5. Advise expeditious referral when indicated

A. Bleeding per rectum:

Rectal bleeding is a common symptom at all ages, can present as an acute and life-threatening event or as chronic bleeding, which might manifest as iron-deficiency anemia. The majority of patients with rectal bleeding will have benign anal conditions such as haemorrhoids or an anal fissure, but rectal bleeding can be significant in that it is a clue to an underlying colorectal cancer or inflammatory bowel disease. The bleeding may sometimes represent a source above the ligament of Trietz, especially if it is massive.

The list of disorders includes:

1. Causes of painless bleeding
 - a. Occult
 - i. Upper GI bleeding due to any disorder like peptic ulcer, erosions, worm infestations, malignancy
 - ii. Lower GI due to colonic carcinoma
 - iii. False positive tests due to intake of iron
 - b. Overt
 - i. Hemorrhoids
 - ii. Lower GI malignancy
 - iii. Inflammatory bowel disease
 - iv. Massive upper GI bleed due to varices or peptic ulcer
2. Painful bleeding
 - a. Fissure
 - b. Thrombosed external hemorrhoids
 - c. Diverticulitis
 - d. Ischemic colitis
 - e. Inflammatory bowel disease

Approach to a patient with rectal bleeding:

The best practice in primary care will include careful attention to history, presence or absence of perianal symptoms, family history of colorectal malignancy.

The red flag symptoms and signs include:

1. Weight loss
2. Anaemia
3. Change in bowel habit
4. Anorexia
5. Fever

In examination, special care should be taken to examine for distension of the abdomen, tenderness, guarding, rigidity and bowel sounds.

The local examination of the perianal area and digital rectal examination should be done to evaluate for hemorrhoids or local lesion. However, in case of a painful perianal condition, it may not be possible and should not be forced.

Proctoscopy may be considered for visualization of the rectum.

Investigations:

Complete hemogram including Peripheral blood film to evaluate for anemia.

Renal and liver function test where indicated.

Fecal occult blood in unexplained anemia

Referral of patients with red flags to a gastroenterologist for endoscopy

In cases with fissures or hemorrhoids the patient may be referred to a general surgeon.

Primary care management:

1. In low risk patients with rectal bleeding who are not overly anxious, it is reasonable to manage their symptoms with treatment and adopt a 'watch and wait' policy. Minimally symptomatic haemorrhoids may be safely observed. Patient will be told to avoid constipation and may be provided local applications for relief.
2. Patients with symptomatic haemorrhoids should be advised topical treatment, oral fluid intake, avoidance of constipation and surgical referral.
 - (i) Consideration should be given to referral to a specialist in any patient with rectal bleeding who has been symptomatic for 6 weeks or more without change in bowel habit and without anal symptoms should also be referred for specialist opinion. In addition patients with a palpable rectal mass should also be referred.
3. An acute anal fissure may be treated with dietary advice and a bulking agent. Topical glyceryl trinitrate (GTN) 0.4% ointment should be considered for chronic fissures (duration of symptoms >6 weeks or clinical appearances of chronicity) with

appropriate advice about application and duration of treatment. Surgical consultation should be taken for cases who do not get relief.

4. In cases with acute abdominal symptoms and signs and significant bleeding appropriate expeditious referral should be made after stabilization.

COUGH

Cough is an important defensive reflex that enhances the clearance of secretions and particles from the airways and protects the lower airways from the aspiration of foreign materials. It may however be a manifestation of a innocuous or serious underlying condition.

ACUTE COUGH

Cough lasting for a maximum of 3 weeks. In the majority of patients, it is caused by upper respiratory tract infections (URTI), acute bronchitis or tracheo-bronchitis due to bacterial or more frequently viral infections.

SUB ACUTE COUGH

Cough lasting for 3-8 weeks. Following some bacterial, viral or atypical infections a period of increased bronchial hyper-responsiveness may persist, which can remain bothersome for a period of weeks even after the initial infection has completely resolved.

CHRONIC COUGH

Any cough lasting for more than 8 weeks is termed chronic and must be evaluated thoroughly. Chronic cigarette smoking is the most common cause of chronic cough. The respiratory causes include Upper respiratory tract infections or malignancies (Laryngeal tuberculosis, neoplasms) or involvement of the lower respiratory tract like COPD, asthma, tuberculosis, occupational or environmental lung disease , pulmonary malignancy. Sometimes it may drug induced cough (ACE inhibitors). When a patient has chronic cough drug history is important. One should ask regarding NSAIDS and beta-blocker intake as it may exacerbate an underlying asthmatic process or COPD. In some cases it may be due to gastro intestinal reflux disease and heart failure.

HISTORY AND PHYSICAL EXAMINATION

Duration and character of cough, smoking history and intake of drugs precipitating cough (e.g. ACE inhibitor) and history of contact with Tuberculosis should be sought specifically. .

Red Flag.signs :

1. Weight loss

2. Hemoptysis
3. Change in voice
4. Change in character of cough

At first, life threatening causes like pneumonia, asthma, COPD, bronchiectasis, lung abscess, lung cancer, foreign body inhalation or congestive cardiac failure have to be ruled out by investigating symptoms, signs and laboratory investigations.

Investigations:

1. Complete blood count to rule out infection and high eosinophil count for allergic conditions.
2. Chest x ray should be done in case who have a cough for over 2 weeks
3. Sputum evaluation should be done in cases with productive cough.

Treatment:

1. In cases with an acute onset of cough who do not meet the CURB65 criteria may be treated at the local level with appropriate antibiotics.
2. However if cases with acute onset of cough have high fever or breathlessness or meet the CURB65 criteria for admission they may be referred.
3. A radiological evaluation may be considered in these cases apart of initial workup.
4. Patients with sub acute cough need to undergo an X-ray, sputum examination and if negative may need further evaluation.
5. In all the above situations, if the clinical condition suggests, inhaled bronchodilators and anti-cholinergics (Salbutamol and Ipratropium) may be considered (the respiratory module may be referred to)
6. In case of chronic cough, evaluation should include X-ray, sputum examination and if negative may need further evaluation.
7. In cases where the cause appears to be cardiac in nature early referral should be considered.
8. Smoking cessation advice should be given to all.

DIZZINESS

One of the most common problems of old age that brings them almost immediately to a health care center is dizziness. This term is often vaguely used to describe many conditions like light headedness, reeling sensation, vertigo, faintness and imbalance. It becomes a

challenging task for the physician to differentiate among these conditions due to the unclear description of the symptom by the older people.

There are many causes for dizziness in the old. One of the important causes is a cardiac arrhythmia. Other causes are orthostatic hypotension, medication effects, vertigo (vestibular causes), space occupying lesions, vascular causes like transient ischemic attacks, migraine. Then a thorough history and clinical examination should be carried out to find the other benign causes.

History

History plays a major role in delineating the cause for dizziness.

Vertigo is an illusion of movement of one's own self or the surroundings. Patient should be enquired about the time of onset, nature, postural variation, duration, frequency, associated features, provoking factors and relieving factors.

Based on the duration , brief dizziness can be attributed to orthostatic hypotension and benign paroxysmal positional vertigo (BPPV).

Vestibular migraine and Meniere's disease lasts for hours.

Repeated attacks of dizziness should raise the suspicion of transient ischemic attacks and migraine.

Associated symptoms also help to assess the cause.

Unilateral hearing loss, tinnitus, ear fullness, ear pain point to a peripheral cause of vertigo whereas unsteady gait, blurring of vision, diplopia, headache and numbness suggest a central cause like a stroke or brainstem lesion. Postural variation leading to dizziness is commonly seen in benign paroxysmal positional vertigo and orthostatic hypotension.

Examination

Once a proper history is collected clinical examination should be focused to the structure most likely involved as evident from the history.

After ruling out cardiac arrhythmia and postural hypotension, the evaluation should include:

1. Neurologic and ENT evaluation
2. All patients with episodic dizziness with positional variation should be tested

Examination and evaluation should include:

- a. ECG
- b. Postural hypotension
- c. Eye movements : Nystagmus
- d. Hearing and local examination of the ear
 - i. Tinnitus
 - ii. Acute hearing loss
 - iii. Dix-Hallpike maneuver

Look for Meniere's disease and Acoustic schwannomas.

- e. Cerebellar functions including
 - i. Gait
 - ii. Intention tremor
 - iii. Past pointing

Investigations

1. Complete hemogram to rule out anemia , diabetes and renal failure
2. Electrocardiogram to rule out arrhythmia
3. Echocardiography to rule out cardiac cause

Referral indications:

Any case with unexplained symptoms, arrhythmias, neurological or ENT localizing symptoms and signs should be referred.

BREATHLESSNESS or DYSPNOEA

Breathlessness is defined as subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity.

Causes:

The most common causes are;

1. Cardiac
2. Pulmonary
3. Anemia
4. Psychological
5. Metabolic disorders: Chronic kidney disease
6. Obesity

History

1. Duration of dyspnea

2. Progression
3. Changes with position : Orthopnoea, PND
4. Associated symptoms like cough or chest pain

Physical Examination

It should focus on:

1. Vital signs.
2. Examine for Anaemia, Cyanosis
3. Examination for use of accessory muscle, JVP elevation, flapping tremors
4. Examination of chest should focus on auscultatory findings: Crepitations, Rhonchi, diminished breath sounds
5. Cardiac examination should focus on elevated JVP, left ventricular dysfunction, and valvular disease.

Investigations

1. Baseline blood investigations to look for anemia
2. Chest x ray
3. Electrocardiogram

Referral indications:

A patient with unstable vital signs, increased or labored breathing, flaps, low oxygen saturation, should initially be stabilized with oxygen therapy, diuretics, bronchodilators as indicated and expeditiously refer to the nearest district hospital or higher centre.

FATIGUE

Fatigue is a major disabling symptom of the old age which can be related to a wide number of systemic, neurologic and psychiatric conditions. It is a subjective human experience of physical and mental weariness, sluggishness, and exhaustion. Fatigue is practically defined as difficulty in initiating or maintaining voluntary mental or physical activity. The patient may sometimes complain of exhaustion.

Aetiology:

It may be variable and include a number of causes:

1. *Anemia*
2. *Infections*

3. *Chronic respiratory and cardiac disorders*
4. *Endocrine disorders like hypothyroidism*
5. *Metabolic disorders like CKD.*
6. *Nutritional disorders*
7. *Environmental factors like heat exhaustion*
8. *Neurological Disorders like Parkinson's disease, Cognitive impairment*
9. *Psychological disorders like Depression*
10. *Drug or Alcohol abuse or addiction*
11. *Malignancy*

Most of the times the underlying cause cannot be identified and may be categorized under chronic fatigue syndrome

A detailed history and examination must be done.

History should focus on:

1. Onset and duration
2. Diurnal variation
3. Associated symptoms
4. Aggravating and relieving features

All these in total can give a clue to a syndromic diagnosis which can determine whether it is primarily mental, physical or both.

History should differentiate fatigue from extensive daytime sleepiness, dyspnea, exercise intolerance and muscle weakness.

Red flags / Indications for referral:

1. Any complaints of fever, chills, night sweats, or weight loss should raise suspicion for an occult infection or malignancy
2. A careful personal history is taken to know about any addictions.
3. A drug history of antidepressants, antipsychotics, anxiolytics, any drug withdrawal.
4. If neurological examination reveals a local cause, referral may be indicated
5. Minimal neurological examination to be carried out to rule out objective neurological weakness.

APPROACH TO SYMPTOMS:

Fever:

Fever the most common symptom of any infection or disease process and is *defined* as an A.M temperature of $>37.2^{\circ}\text{C}(98.9^{\circ}\text{F})$ or a P.M temperature of $>37.7^{\circ}\text{C}(99.9^{\circ}\text{F})$. Normal daily variation is typically $0.5^{\circ}\text{C}(0.9^{\circ}\text{F})$.

A fever of $>41.5^{\circ}\text{C}(106.7^{\circ}\text{F})$ is called *hyperpyrexia*. It occurs in patients with severe infections but most commonly seen in CNS hemorrhage.

Hyperthermia (*heat stroke*) is characterized by an uncontrolled increase in body temperature that exceeds the body's ability to lose heat.

Hyperthermia is often diagnosed on the basis of events immediately preceding the elevation of core body temperature. Antipyretics do not reduce elevated temperature in hyperpyrexia.

Fever that is undiagnosed after 3 weeks of evaluation is called Fever of Unknown Origin (FUO).

Age related impairment in thermoregulation and decreased sweating predisposes elderly to hyperthermia. Also elderly may fail to mount an increase in temperature in response to infection so it may not be a typical presentation even in infections.

HISTORY AND PHYSICAL EXAMINATION

A thorough history and physical examination gives us a clue regarding the focus and etiology of the fever and helps in making a clinical diagnosis

This needs to be confirmed with laboratory reports.

History should focus on:

1. the onset of fever,
2. duration,
3. progression,
4. grade of fever,
5. diurnal variation,
6. number of episodes per day,
7. association with chills and rigors,
8. association with skin rash,
9. joint pains,
10. convulsions,
11. association with bleeding manifestations,
12. relief with medication is necessary.

General physical examination is essential in the evaluation of fever which includes eyes, ears, nose, oral cavity, lymphadenopathy, extremities, skin, examination to rule out any local cause of infection.

Recording the pulse rate, respiratory rate, blood pressure, temperature plays a crucial role in clinical examination. Systemic examination includes respiratory, cardiovascular, gastrointestinal, neurological, rheumatological systems. In many cases in the elderly, the exact cause may not be obvious and thorough evaluation should be done.

Laboratory reports

1. Complete blood counts: including evaluation for leucocytosis, malaria and platelet count.
2. Urinalysis to exclude UTI
3. Other investigations include a Chest X ray
4. Blood and Urine culture may be indicated.

Referral indications:

1. Fever of unknown origin,
2. Associated with significant weight loss
3. Hemodynamically unstable patient

A special note on hyperthermia and heat stroke

HEADACHE

Headache can be primary or secondary. Primary headaches are those in which headache and its associated features are the disorder in itself, whereas secondary headaches are those caused by exogenous disorders.

Primary headache often results in considerable disability and a decrease in patient’s quality of life. Mild secondary headaches , such as that seen in association with upper respiratory tract infections, is common but rarely worrisome. Life-threatening headache is relatively uncommon, but vigilance is required in order to recognize and appropriately treat such patients.

Common causes of headache:

Primary headache	Secondary headache
Tension type	Systemic infection
Migraine	Head injury
Idiopathic stabbing	Vascular disorders
Exertional	Subarachnoid hemorrhage
Cluster	Brain tumor

History and clinical evaluation:

History taking is most important in delineating the causes of headache. We should ask about the duration of headache, diurnal variations, localization, and any associated symptoms like nausea, vomitings, photophobia, lacrimation, rhinorrhea.

The patient who presents with a new, severe headache has a differential diagnosis that is quite different from the patient with recurrent headaches over many years. In new-onset and severe headache, the probability of finding a potentially serious cause is considerably greater than in recurrent headaches. Patients with recent onset of pain require prompt evaluation and appropriate treatment.

Serious causes to be considered include

1. Meningitis
2. Subarachnoid hemorrhage
3. Epidural or subdural hematoma
4. Glaucoma
5. CNS Tumors
6. Purulent sinusitis.
7. Temporal arteritis

Worrisome symptoms are:

1. sudden onset headache,
2. first severe headache,
3. worst headache ever,
4. vomitings that precede headache,
5. subacute worsening over days or weeks,
6. pain induced by bending, lifting, cough
7. pain that disturbs sleep
8. presents immediately upon awakening
9. onset after age 55
10. known systemic illness
11. fever
12. abnormal neurologic examination
13. pain associated with local tenderness(region of temporal artery)
14. Lacrimation, red eye and visual blurring

Investigations:

1. Complete blood count
2. Blood chemistry
3. CSF analysis in suspected case of meningitis
4. Imaging studies of brain in suspected case of tumor and sub arachnoid hemorrhage

If the patient has red flag signs or other indicators referral should be made.

Temporal (giant cell) arteritis is an inflammatory disorder of arteries that frequently involves the extracranial carotid circulation. It's a common disorder of elderly, affects above 50 age group and women account for 65% of cases. Typical presenting features are superficial headache, polymyalgia rheumatica, jaw claudication, fever, and weight loss. Headache may be unilateral or bilateral and is temporal in location. Headache usually appears gradually

over a few hours before peak intensity is reached. Scalp tenderness is present, brushing the hair, resting the pillow on head may be impossible because of pain. There may be reddened, tender nodules or red streaking of the skin overlying the temporal arteries. A temporal artery biopsy followed by immediate treatment with prednisolone 80mg daily for the first 4-6weeks should be initiated when the clinical suspicion is high.

Referral indications: presence of red flag signs and persistent headaches

Insomnia:

Insomnia is an experience of inadequate or poor-quality sleep characterized by one or more of the following problems: difficulty falling asleep, difficulty maintaining sleep, waking up too early in the morning and sleep that is not refreshing. Insomnia also involves daytime consequences such as fatigue, lack of energy, difficulty concentrating and irritability.

Physiology of sleep pattern in old age

Periods of sleep difficulty lasting between one night and a few weeks are referred to as acute insomnia. Chronic insomnia refers to sleep difficulty occurring at least three nights per week for one month or more.

30 to 40 percent of adults indicate some level of insomnia within any given year, and about 10 to 15 percent indicate that the insomnia is chronic, severe, or both.¹ The prevalence of insomnia increases with age and is more common in women

Causes of Insomnia

Acute insomnia

Acute insomnia is often caused by an emotional or physical discomfort. Some examples of common discomforts include significant life stress, acute illness and environmental disturbances such as noise, light and temperature. Sleeping at a time that is inconsistent with the daily biologic rhythm, such as occurs in persons with jet lag, also may cause acute insomnia.

Chronic insomnia

Chronic insomnia may be caused by many different factors acting singly or in combination and often occurs in conjunction with other health problems. In other cases, sleep disturbance is the major or sole complaint and involves abnormal sleep-wake regulation or physiology during sleep. Etiologies of insomnia are coexisting physical illness such as thyroid disease and coexisting psychological illnesses such as depression and anxiety. Medications, including antidepressants, psycho-stimulants, steroids, and β agonists, are significant contributors to sleep disorders, as are caffeine and alcohol.

Consequences

The primary consequences of acute insomnia are sleepiness, negative mood and impairment of performance. The severity of these consequences is related to the amount of sleep lost on one or more nights. Patients with chronic insomnia frequently complain of fatigue, mood changes (e.g., depression, irritability), difficulty concentrating and impaired daytime functioning.

Assessment

Assessment should include specific questions concerning sleep onset, sleep maintenance, and early-morning waking as these will provide clues to the causative agents and to management.

Patients should be asked about previous sleep problems, screened for depression and anxiety, and asked about symptoms of thyroid disease. Caffeine and alcohol are prominent causes of sleep problems, and a careful history of the use of these substances should be obtained.

Both excessive use and withdrawal from alcohol can be causes of sleep problems.

Interventions

The mainstays of intervention include improvement of sleep hygiene (encouragement of regular time for sleep, decreased nighttime distractions, elimination of caffeine and other stimulants and alcohol), intervention to treat anxiety and depression, and treatment for the insomnia itself.

Textbox of Sleep Hygiene

Medscape®

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Principles of sleep hygiene

- Regular sleep/wake cycle¹⁻³
- Regular exercise morning/afternoon^{1,3}
- Increase exposure to bright light during day²
- Avoid exposure to bright light during night^{1,3}
- Avoid heavy meals/drinking <3 hrs of bedtime¹
- Enhance sleep environment^{1, 3}
- Avoid caffeine, alcohol, nicotine^{1, 3}
- Relaxing routine¹⁻³
- Warm bath/socks

¹NHLBI Working Group on Insomnia. 1998. NIH Publication 98-4088. ²Kupfer DJ, Reynolds CF. *N Engl J Med*. 1997;336:341-346. ³Lippmann S, et al. *South Med J*. 2001;94:866-873.

Referral indications: evidence of underlying organic disease, failure of non pharmacological measures.

PAIN

Pain is an unpleasant sensation localized to a part of the body. It is often described in terms of a penetrating or tissue-destructive process (e.g., stabbing, burning, twisting, tearing, squeezing) and/or of a bodily or emotional reaction (e.g., terrifying, nauseating, sickening).

Pain may be underreported as some elderly patients incorrectly believe that pain is a normal process of aging. A comprehensive pain assessment includes a thorough medical history and physical examination, review of systems and pertinent laboratory results, imaging

studies, and diagnostic tests. A multidisciplinary approach is recommended to investigate all possible options for optimal management, including pharmacotherapy, interventional procedures, physical rehabilitation, and psychological support. The prevalence of persistent pain increases with age, increases in joint pain and neuralgias are particularly common. A majority of elderly persons have significant pain problems and are undertreated.

Pain assessment and physical examination

The treatment of pain begins with the assessment of what instigated the pain, how it can be terminated, and what management modalities are most effective for a particular patient. However, assessment is rarely that simple. When a patient presents with pain we should ask for the site, character of the pain, onset, progression, duration, radiation, diurnal variations, aggravating and relieving factors. Clinical manifestations of persistent pain are often complex and multifactorial in the older population. Even the perception of pain may differ from that perceived by those of less advanced years. Issues of physical accessibility to treatment, cost of drugs, the presence of coexisting illness, the use of concomitant medication, and the ability to understand the complaints of the patient who has cognitive impairment are only some of the factors that contribute to the complexity of the situation. Furthermore, the elderly patient's condition is often complicated by depression, psychosocial concerns, denial, poor health, and poor memory. Without a thorough assessment, pain that is causing severe impairment may not be revealed for an array of personal, cultural, or psychological reasons.

Pain Intensity Measurement

The visual analogy scale (VAS), verbal descriptor scale, and numerical rating scale are frequently used to assess pain intensity. Available data support the use of these methods; however, the VAS should be used with caution as it is associated with a higher frequency of responses from the elderly that are incomplete or unable to be given a score. Moreover, elderly patients report difficulty in completing the VAS. It has, however, proven reliability in clinical and research settings, and offers the advantages of simplicity, ease of administration, and minimal intrusiveness.

After assessing the intensity of pain, one should perform a thorough examination.

1. Complete history and physical examination, with focus on most pressing pain issues
2. Review of location of pain, intensity, exacerbating and/or alleviating factors, and impact on mood and sleep
3. A screen for depression
4. A review of the patient's ADLs (bathing, dressing, toileting, transfers, feeding, and continence) and instrumental ADLs (use of phone, travel, shopping, food preparation, housework, laundry, taking medicine, handling finances)
5. Assessment of gait and balance
6. A screen for sensory depression to examine basic visual and auditory function

The rehabilitative aspect of pain management may help the patient live a more independent and functional life. Rehabilitation may involve adapting to loss of physical, psychological, or social skills.

Interventional pain modalities may help to determine the underlying cause of pain and help to arrive at a precise diagnosis. Nerve blocks are some of the most commonly used interventional procedures employed.

Pruritus

Pruritus is defined as an unpleasant sensation that provokes the desire to scratch. It is a common symptom, rather than a specific disease entity, that occurs in a diverse range of skin diseases and may appear as a prominent feature of extracutaneous disorders such as systemic, neurologic, and psychiatric diseases.

Pruritus is a subjective sensation; therefore, the diagnosis is based solely on the patient's symptoms. However, a thorough history and complete physical examination are central to the evaluation of pruritus. During clinical evaluation, it is important to identify a possible cause or disease responsible for itching, as well as determining the intensity and timeframe of the pruritus.

In every patient with chronic pruritus it is essential to determine whether the itchy skin looks normal or not. For lesional skin, primary eruption must be differentiated from secondary scratch lesions. If primary skin lesions are present, the diagnosis is made based on clinical presentation, skin biopsy, and additional examinations, if necessary

In the absence of a primary skin lesion, the review of systems should include evaluation for thyroid disorders, lymphoma, kidney and liver diseases, and diabetes mellitus.. Chronic or generalized pruritus, older age, and abnormal physical findings should increase concern for underlying systemic conditions

History:

Disease history typically reveals the onset of pruritus, its intensity, and sleep disturbances related to it. Concomitant systemic diseases that could provoke itching should be considered in the patient's medical history and associated current symptoms. The physician should also take a thorough medication history and consult the pharmacological literature on adverse effects to establish the likelihood of drug-induced pruritus as a cause for the patient's itch. Aquagenic pruritus may indicate polycythemia vera. It is important to consider scabies

Physical examination:

Itch can be divided into pruritoceptive, neurogenic, neuropathic, psychogenic. Dermatological pruritus is diagnosed in patients with primary skin lesions that can be linked with itch sensation. Other pruritus types (systemic, neurological, psychogenic) are often not associated with a visible skin problem, but many patients may have secondary scratch lesions (excoriations, lichenification, nodular lesions) that must be differentiated from a primary skin eruption.

Special attention should also be directed to identifying any signs of secondary scratch lesions, such as excoriations, erosions, or nodular prurigo-like lesions. Some conditions causing pruritus can be diagnosed on clinical findings alone and include skin xerosis, insect bites, diabetic peripheral neuropathy, post-herpetic itch, depression, schizophrenia, somatoform disorder, and drug-induced pruritus.

Investigations:

- If a condition cannot be diagnosed based on the clinical findings alone, further investigation is warranted.
- Microscopy of skin scrapings should be done to confirm scabies, and to exclude parasitic skin infestations in persistent delusional disorders.
- Stool microscopy should be performed in suspected systemic parasitic infection.

Most common cause of pruritis in elderly is age related alteration in skin structure and xerosis which can be managed with emollients and reassurance.

SEIZURE

Seizure is a paroxysmal event that occurs due to abnormal excessive or synchronous neuronal activity in the brain.

Seizure and epilepsy are two different entities. Any single episode of seizure or recurrent episodes of seizures due to correctable conditions does not imply that the patient has epilepsy.

Classification of seizure

Classification of the seizure not only focuses on diagnostic approach but also gives clue to the etiology as well as the prognosis. Basic division depends on whether the seizure is focal or generalized. Focal seizures can be motor, sensory, autonomic and cognitive. Generalized seizures on the other hand can be absence tonic clonic, clonic, tonic, atonic and myoclonic.

History

Before knowing the details of the episode a physician should bear in mind the common causes of seizures in old age. Most common cause being cerebrovascular disease followed by metabolic disorders like electrolyte imbalance, uremia, hepatic failure, hypoglycemia and hyperglycemia. Other causes like alcohol withdrawal, Alzheimer's disease, drugs, tumours should also be considered.

If a patient presents soon after an episode of seizure, his blood pressure, airway, and vital signs should be stabilized. Causes that are life threatening like CNS infections, metabolic derangement or drug toxicity must be given priority and managed immediately. If the patient is not acutely ill then a detailed history of the event is considered. If the seizure activity occurred for the first time then a physician has to establish whether the reported episode was a seizure or a pseudo seizure. For this questions should focus on symptoms before,

during and after the episode. Patient may be unaware of the ictal and the immediate post ictal phases, hence witness to the event must be interviewed carefully.

Physician also has to determine the risk factors and precipitating events, which include history of febrile seizure, earlier auras, family history of seizures etc. epileptogenic factors such as prior head trauma, stroke, tumour, or CNS infection should also be identified. If the episode occurs in a person with prior seizure history a proper history regarding the dose of epileptics being used and the compliance to treatment has to be known.

Before establishing a diagnosis of seizure it is required to exclude syncope, transient ischemic attack, migraine and acute psychosis.

Examination

A head to toe examination should be carried out to look for signs of infection or systemic illness. Skin should be searched for neurocutaneous markers, signs of renal failure or liver failure. Signs of head trauma and use of illicit drugs should be sought. Examination of all peripheral pulses and auscultation of heart and carotid vessels may find an abnormality that predisposes to cerebrovascular disease.

All patients must undergo a complete neurological examination with importance given to functions of various lobes. Visual field testing will give the involvement of optic pathways and may also point to the location of the disease. Screening tests of motor function such as pronator drift, reflexes, gait and coordination may suggest lesions in motor cortex, and cortical sensory testing like graphesthesias, stereognosis, two point discrimination and tactile localization detect lesions in parietal cortex.

Investigations:

A routine blood work up is done to rule out metabolic derangements. Imaging is done to look for any vascular accidents, infections or space occupying lesion. All patients who have a possible seizure disorder should be evaluated with an electroencephalogram (EEG) immediately. The presence of electrographic seizure activity during the clinically evident event clearly distinguishes a seizure from a pseudo seizure and hence establishes the diagnosis.

However the absence of electrographic activity doesn't rule out a seizure. EEG is also useful for classifying seizures and aiding in selection of anti-convulsant medication. Magneto encephalography (MEG) provides another way of non-invasively looking at cortical activity. The source of epileptiform activity seen on MEG can be analyzed and its source in the brain can be estimated using a variety of mathematical techniques.

VOMITING

Vomiting (emesis) is the oral expulsion of gastrointestinal contents due to contraction of gut and thoracoabdominal wall musculature. Regurgitation is effortless passage of gastric contents into mouth. Rumination is the repeated regurgitation of food residue, which may be rechewed and reswallowed

Causes of emesis: nausea and vomiting are caused by conditions within and outside the gut as well as by drugs and circulating toxins. Even though there are multiple causes of vomiting, the most common causes of vomiting in elderly are enteric and systemic infections, Acid peptic diseases and drug induced, renal and hepatic disease

History and physical examination: the history helps define the etiology of nausea, vomiting. Drugs, toxins, and infections often cause acute symptoms, whereas established illnesses evoke chronic complaints. Gastroparesis and pyloric obstruction elicit vomiting within an hour of eating. Emesis from intestinal blockage occurs later. Vomiting occurring within minutes of meal consumption prompts consideration of rumination syndrome.

With severe gastric emptying delays, the vomitus may contain food residue ingested hours or days before. Hematemesis raises the suspicion of an ulcer, malignancy, or Mallory-weiss tear. Feculent emesis is noted in distal intestinal or colonic obstruction. Biliious vomiting excludes gastric obstruction, whereas emesis of undigested food is consistent with a Zenker's diverticulum or achalasia.

Vomiting can relieve abdominal pain from a bowel obstruction, but has no effect in pancreatitis, cholecystitis. Profound weight loss raises concern about malignancy or obstruction. An intracranial source is considered if there are headaches or visual field changes. Vertigo or tinnitus indicates labyrinthine disease.

Physical examination complements the history. Abdominal auscultation may reveal absent bowel sounds with ileus. High-pitched rushes suggest bowel obstruction, whereas a succession splash upon abrupt lateral movement of the patient is found with gastroparesis or pyloric obstruction.

Diagnosis and treatment:

Routine blood investigations to rule out infections and organ failure

Imaging of chest and abdomen to rule out bowel obstruction

Referral indications: Hematemesis, evidence of bowel obstruction, chronic vomiting associated with weight loss

Treatment:

- Identify and correct the fluid and electrolyte imbalances
- Treat the underlying cause

.Therapy of vomiting is tailored to correcting remediable abnormalities if possible like correction of electrolytes and dehydration. Depending on the clinical indication, patients should be treated with antiemetic agents, prokinetic agents and in some special settings like chemotherapy-induced emesis, can be treated with methylprednisolone, dexamethasone and tetrahydrocannabinol.

