Health Messenger

Distance Learning Health Magazine

ISSUE 1 NOVEMBER 1998
HEALTH MESSENGER has introduced this system of icons which represent the main topics that are most relevant for the health worker. If the icon above is colored or "on" then one or more articles have been prepared for that topic in this issue. If the icon is grey or "off" then there is no article for that topic in this issue.
Health worker, faced with a patient who is either ill or injured, must be capable of assessing that patient, in any event. So, arriving at a working diagnosis, he/she should be able to determine what to provide. Often the health worker is alone and may feel isolated. When confronted with an emergency problem, the health worker must react as a competent practitioner: careful, perceptive, determined and efficient. A human life depends on the decisions which are made and the health worker must remain accountable for his/her actions. To be effective, the health worker must have access to training. Eagerness to learn is not enough; everyone needs some help. SAYTAMAN aims to meet even remote communities to promote distance learning and to encourage health staff to revise and improve their knowledge.

In this first issue, we hope that you will find articles interesting, practical and useful. In order to enable you to review the medical lessons you have learned (and perhaps some that have been forgotten) we will try to put at your disposal a magazine that provides the resources you need to continue learning. Working together, step by step, let’s make progress in all fields: Medical Science, Management, Maintenance but, above all, Human Relationship.

Working towards the improved health of our communities is worthwhile!

Sincerely,
The Editor
The individual’s response to a drug is complex and health workers must be mindful of following factors which may influence this response:

1. Absorption
   Oral absorption takes place as drug particles move from stomach and small intestine to body fluids.
   Drug absorption can be disturbed by many factors such as vomiting or diarrhoea.

2. Distribution
   Both lipid-soluble and lipid-insoluble drugs can diffuse across the placenta and some of them have teratogenic effects. They may induce abnormal development of organs or body systems, especially if these drugs are taken during the fourth through the eighth weeks of gestation.
   Fortunately, the placenta acts as a barrier and separates blood supply of the foetus from the mother.
   Compounds that are not easily soluble in fat are prevented from entering into the brain and neoplastic agents are drugs that do not cross the blood-brain barrier.

3. Biotransformation
   Bio-transformation is known as metabolism of the medication. Low birth-weight infants and especially neonates have immature liver and kidney function that affect the metabolism of a medication. The elderly also have a loss of kidney function with the same result.

4. Excretion
   The main route for drug excretion is via the kidneys but bile, stools, lungs, saliva, and sweat, are also routes of drug excretion.

5. Age
   Remember that the elderly are hypersensitive to phenobarbital and central nervous system depressants.

6. Body Weight
   Drugs dose may be ordered according to the body weight. Calculation of infant doses must always be based on weight in kilograms.

7. Toxicity
   It is more common in persons with liver or renal impairments.

8. Genetic Factors
   If parents have an adverse drug reaction, children may also present an identical reaction.

9. Route of administration
   Intravenous drug administration allows the drug to act more rapidly than other routes.

10. Time of administration
    The presence or absence of food in the stomach can affect the reaction of some drugs.

11. Emotional Factors
    Suggestive comments about the drug and its side-effects may influence anxious persons.

12. Pre-existing disease state
    For instance, diabetics, of course, should not be given elixirs or syrups containing sugar.

13. Tolerance
    Repeated administration of a certain drug may diminish or intensify the effects and a combination of drugs may be given to decrease or delay the development of tolerance for a specific drug.

14. Cumulative effects
    This occurs when the drug is excreted more slowly than the rate at which it is being administered.

15. Drug-drug interaction
    The action of the combination of drugs may be greater, equal, or less, than the action of a single drug. An adverse reaction may lead to complications such as allergy.
The "Six Mistakes" in Drug Administration

Medics and nurses should avoid the following six mistakes to provide safe drug administration:

1. **Mistake about the patient**
   Some patients are unable to respond and some will answer to any name. The health worker must verify the patient’s identity before administering any drug. This must be done for every patient and each time a drug is given. You must check carefully when two patients have the same name.

2. **Mistake about the drug**
   It is important that the patient receives the drug that was prescribed. The components of a drug order are:
   - date the order is written
   - drug name
   - drug dosage
   - route of administration
   - frequency of administration
   - duration of administration
   - prescriber’s name and signature.
   The person administering the drug must read the labels carefully:
   a) at the time of contact with the drug container or bottle
   b) before pouring the drug
   c) before returning the container or bottle.

3. **Mistake about the dose**
   The right dose is the dose prescribed for a particular patient, within the recommended range for the desired drug.
   The implications of drug administration include:
   - Correct calculation of the drug dose and double checking of the calculation by another health worker when there is doubt
   - Check the patient’s weight for weight related doses.

4. **Mistake about the time**
   To maintain the plasma level of the drug, daily drugs are given at specific times during a day.
   For instance;
   - b.i.d. = two times a day
   - t.i.d. = three times a day
   - q.i.d. = four times a day
   - q6h = every six hours

   Antibiotics should be administered at even intervals throughout a 24hr period to maintain therapeutic blood levels such as q8h rather that t.i.d.

   Some drugs are given before meals whereas others are given with meals or food. The latter are those that can irritate the stomach. It is always important to check the expiry date of the drug.

5. **Mistake about the route**
   A right route is necessary for adequate or appropriate absorption. The common routes are:
   - **By mouth**
     Oral route via drinking or swallowing
   - **Sublingual route**
     via under tongue for venous absorption
   - **Via skin**
     Topical route via skin application
   - **Inhalation**
     Via aerosol, sprays
   - **Instillation**
     Via nose, eye, ear, rectum, or vagina
   - **Four parental ways**
     - intradermal
     - subcutaneous
     - intramuscular
     - intravenous either directly or by drip

6. **Mistake about the documentation**
   To avoid this mistake, the nurse must immediately record the appropriate information about the drug administration.
   At times you need to record the patient’s response to the medication. An unexpected reaction to the medication can be noticed by signs such as skin sensitivity. Delay in charting can result in forgetting to chart the drug administration in which case another health worker may give the drug a second time because they thought the drug had not already been given.
   A strict observation of these rules allows excellent drug efficiency and prevents mistakes. However, if an accident occurs, it is because these precautions have not been followed.
A as in **Acute Abdomen**

An abdominal condition of abrupt onset usually associated with: - abdominal pain and tenderness  
- constipation  
- vomiting.  
- and moderate ( or no ) fever, due to:  
- inflammation  
- perforation  
- obstruction  
- infarction (= formation in an area of necrosis, in a tissue due to local ischemia resulting from obstruction of circulation to the area, most commonly by a clot, thrombus or embolus )  
- or rupture of intra-abdominal organs.  
Emergency surgical intervention is usually required.  
Examples are, most often,  
- acute cholecystitis  
- appendicitis  
- perforated peptic ulcer  
- strangulated hernia  
- splenic rupture  
- superior mesenteric artery thrombosis

B as in **Balance**

Of course, it is an instrument for weighing but, in the figurative meaning, is the harmonious adjustment of functions in the medical field.  
An example is an acid-base balance; a condition in which the net rate of acid or alkali production is balanced by the net rate of acid or alkali excretion from the body. It results a stable concentration of Hydrogen ions ( H + ) in the body fluids.  
Acid increases the Hydrogen ion concentration which lowers the pH. Acids react with alkalis to form salts.*  
*.[Watch the medical meaning of “salt” : it is not only common salt but any compound of a base (= alkali) and an acid. Base is the non-acid part of a salt.  
Alkali is any class of compounds which form soluble soaps with fatty acids. pH is the symbol relating the Hydrogen ion concentration of a given standard solution. pH 7 is neutral: above it, alkalinity increases and below it, acidity increases

C as in **Calcium**

- is the basic element of lime.  
- is found in nearly all organized tissues, being the most important mineral in the body.  
In combination with phosphorus it forms phosphate, the dense, hard material of the teeth and bones.  
- is an essential dietary element, a constant blood calcium level being essential for the maintenance of the normal heart beat and for the normal functioning of nerves and muscles.  
It also plays a role in the multiple phases of blood coagulation, in which it is called “coagulation factor IV”, as well as many enzymatic processes.

D as in **Muscular Defence**

- is the muscular tension and rigidity which accompanies a localized inflammation, more often of the abdominal muscular wall (see above **Acute Abdomen**)

E as in **Elephantiasis**

Is a chronic filarial disease due to infection of the lymphatic channels with the nematode WUCHERERIA bancrofti or BRUGIA malayi and characterized by inflammation and obstruction of the lymphatics, hypertrophy of the skin and subcutaneous tissues.  
The legs and external genitals are principally affected.  
The disease begins with attacks of dermatitis. This is associated with:  
- enlargement of the part,  
- chills and fever,  
- and is followed by the formation of ulcers and tubercles with thickening, discoloration and fissuring of the skin.
Simple words can explain, as well as medical terms, how some warning signs of cancer, can be detected by means of an easy and painless self-examination. In preventive medicine, early detection often saves lives.

Everybody must know some signs and urged to spend four or five minutes once a month on a self-examination in search of any of these signals. But if one of them is present, do not get panic; it can occur for many other reasons. However, it is necessary to go to the O.P.D without delaying in doing it.
How To Examine Your Breast

(A) Examine your breasts during bath or shower; hands glide easier over wet skin. Fingers flat, move gently over every part of each breast. Use right hand to examine left breast. Check for any lump, hard knot, or thickening.

(B) Stand before a mirror and inspect your breast, first with arms at your sides, then with arms raised high overhead. Look for any changes in the shape of each breast, swelling, dimpling of the skin, or changes in the nipple. Then rest your palms on your hips and press down firmly to flex your chest muscles. Left and right breasts will not exactly match; few women's breasts do.

(C) Lie down on a bed and put a pillow or folded towel under your right shoulder. Place your right hand behind your head; this distributes your breast tissue more evenly on the chest. With left hand, fingers flat, press gently in small circular motions around an imaginary clock face. Begin at outermost top of your right breast for 12 o'clock, then move to 1 o'clock, and so on around the circle back to 12. A ridge of firm tissue in the lower curve of each breast is normal. Then move in an inch toward the nipple and keep circling to examine every part of your breast, including the nipple. This requires at least three more circles. Repeat this procedure on your left breast with a pillow under your left shoulder and your left hand behind your head.

(D) Finally, squeeze the nipple of each breast gently between thumb and index finger. Any discharge, clear or bloody, should be reported to a doctor immediately.
Absorption of alcohol begins in the stomach. Approximately, 20% passes directly into the venous drainage of the stomach wall. The majority of alcohol (80%) is absorbed into the venous drainage of the small intestine. Once in the venous drainage, alcohol is transported to the liver for oxidation. When it arrives in the liver, alcohol undergoes oxidation.

The liver is capable of oxidizing 19 g of alcohol per hour. Surplus alcohol is circulated through the body and blood alcohol concentration rises, then gradually falls as the liver metabolizes the remaining alcohol. While alcohol is circulating through the bloodstream, it affects a wide range of cells and particularly, reaching the brain, it can damage and even destroy nerve cells.

**Oxidation** = The chemical name of alcohol is ethanol; It is obtained by fermentation of carbohydrate (such as sugars, starches, celluloses, gums and so on) with yeast. Oxidation is accomplished by the removal of a pair of hydrogen atoms from the molecule of alcohol. (molecule is the smallest part of a substance which can exist.)

**Alcoholism**

Drinking excessively to the point of damaging the body or seriously disrupting one’s life is symptomatic of an underlying disease known as alcoholism.
(6) Alcohol and the other products reach the brain within minutes. They keep circulating until the liver completes their metabolism.

(5) The liver creates intermediary products such as the druglike salsolinol. It also slowly breaks down the alcohol into acetatem, carbon dioxide, oxygen, and energy.

(4) The bloodstream carries alcohol to all parts of the body, including liver, heart, and brain.

(3) The remainder of the alcohol enters the bloodstream more slowly from the small intestine.

(2) An empty stomach may release up to 25 percent of the alcohol level. (Less is released from a stomach containing food.)

(1) The person drinks beer, wine, or hard liquor.
The Lips
To examine the mouth correctly, we need good light, a tongue depressor and the examiner’s eyes helped by the examiner’s glove-covered fingers. The examiner has to visualize all areas of the oral cavity. Lips are the easiest part of the mouth for examining but require a very careful examination.

(A) Cleft lip:
This congenital condition is frequently associated with a cleft palate. The palate is the partition separating the nasal cavity, consisting anteriorly of a hard bony part and posteriorly of a soft fleshy part the oral cavity. The osseous palate is formed by the palatine processes of the maxillae and the horizontal plates of the palatine bones; the fleshy part of the roof of the mouth extends from its free inferior border is a projection of variable length the uvula. The cleft in the lip is repaired surgically at about three months of age. Any associated cleft of the palate is usually repaired later at a second operation.

Ruptured or simply incised, it usually reforms.
It is necessary to excise the entire lesion under local anesthesia, with the remaining lobules of the associated gland.

(B) Mucocele
Mucocele of the lip is firm, indented, somewhat translucent and occurs most commonly on the lower lip in form of a mucous polyp, dilatation of a cavity with accumulated mucous secretion.

Mucocele develops when the duct of one of the mucus secreting gland within the lip becomes damaged by minor trauma. It contains a clear thick mucoid fluid. Ruptured or simply incised, it usually reforms.
It is necessary to excise the entire lesion under local anesthesia, with the remaining lobules of the associated gland.

(C) Papilloma of the lip
This a benign pedunculated lesion, a stemlike connecting often on a stalk, which is a nonsessile tumor, attached to normal tissue, probably of viral origin. A papilloma is not premalignant. Surgical excision under local anesthesia is the treatment of choice. We excuse the entire papilloma including the base.

(D) Hyperkeratosis of the lip:
Can develop at a number of sites within the mouth. It is a premalignant lesion and requires biopsy to exclude malignancy. The term leukoplakia is used to describe a white, thickened plaque. Regular observation is required and avoidance of the etiologic factors is important: heat from pipe stems, cigarette butts, etc.

(E) Squamous cell carcinoma of the lip:
Leukoplakia, chronic irritation, radiation, particularly solar radiation and keratosis are the factors predisposing and/or sparking off this most common malignant condition of the lip. It is characterized by an infiltrating and hard usually painful, ulcer. Every hard ulcer of the lip that has not healed within one month must be assumed to be malignant. The treatment consists of a wide excision with tumor-free margins.

(F) Cold Sore (Herpes labialis)
The herpes simplex virus causes a small initially painless cluster. The development of herpes labialis is frequently associated with a febrile illness and occurs in individuals who earlier in life had a primary acute herpetic gingivostomatitis. A local treatment is, most of the time, sufficient. Some other conditions are rare and need specialist’s examination.
Lower Jaw Joint Disease

It is a joint disease for which symptoms may include:
- ear pain
- facial pain
- headache
- muscle tenderness
- joint noises
- tinnitus or dizziness.

Abnormal bony changes in the articular disk (a pad of dense fibrous tissue located between the articular part of two bones articular rounded projection of the lower jaw, can produce this disease.

Usually, three main signs are met:
- ear pain
- tinnitus (a noise in the ear as ring, buzzing, roaring, etc.)
- dizziness.

Of course, a careful differential diagnosis should be considered because identical signs may occur with other origin as primary ear disorders or, more severe, a tumor.

When changes are advanced, it results in movements across an irregular area which develop a form of clicking called crepitus. The crepitus may progress to a grating or grinding noise.

Usually the history of patients includes ear or/and joint pain, clicking or grinding noise and limitation of joint function with motion limitation in most cases, there are stress and anxiety. The joint may be very painful because of muscle spasm in the muscles of mastication.

Causes are essentially:
(1) external causes such as jaw injury in an accident, even a light blow in the mandible, or a very broad stretching with dental work and tonsillectomy (when tonsils are taken out) or adenoidectomy (removal of the abnormal development of the lymphoid tissue located between the rear part of the nose and upper portion of the pharynx which communicates with the auditory tube.)

(2) internal causes with dental malocclusion from missing and carious teeth or poorly fitting dentures.

Before asserting the diagnosis of lower jaw joint disease, a close examination of the ear, nose, sinuses and throat, should be done, to preclude these areas as a source of pain. The examination should include an evaluation for tenderness, noise, and range of motion.

Non-surgical treatment is the primary treatment of choice. Relief of symptoms or long periods free of pain are obtained with local heat application, massage, soft diet, removal of central nervous stimulants, and administration of antiinflammatory agents including local corticosteroids by injection.

Only after failure of non-surgical treatment, should surgery be considered. Surgical intervention should be made in clearly defined cases such bony ankylosis, disk dislocation or perforation, or in patients with unrelenting pain or severe limitation of upper jaw joint motion. An interpositional implant is used in all open surgery cases.
The red, painful, brawny swelling within the septal portion of the left nasal vestibule is a furuncle.
A boil or furuncle of the nasal vestibule is an acute, circumscribed infection of the subcutaneous layers of the skin. *Staphylococcus aureus* is usually the causative organism.

Typically, the infecting *staphylococcus* is a long term occupant of the patient’s nasal vestibule and much such organisms are penicillin-resistant. Nose picking or enthusiastic trimming or avulsion of the nasal hairs are the every-day habits that damage the vestibular epithelium and permit the subcutaneous entrance and subsequent proliferation of the pathogenic organisms.

Clinically, there is an acute local pain or a pricking sensation, within the nasal vestibule. A small, firm, tender, erythematous swelling develops within the vestibule and, in more severe cases, cellulitis can develop. A local abscess develops in 24 to 48 hours.

Although most nasal boils are minor, the patient should be advised to avoid squeezing the furuncle, since a rare but potentially fatal complication of suppurative within the central part consists to the development of a cavernous sinus thrombosis.

Manipulation of the furuncle predisposes to spread of the bacterial into the cavernous sinus.

Cavernous sinus thrombosis is characterized by
- ophthalmoplegia,
- bilateral gross eyelid oedema
- and severe toxic condition.

The application of an antibiotic ointment effective against the penicillin-resistant staphylococci and frequent local compresses may treat a nasal furuncle diagnosed at a very early stage.

If there is minor cellulitis, or if the above measures are not effective within one day, cloxacillin or amoxicillin + clavulanic acid taken for 7 days is usually effective.

If there is a very aggressive cellulitis, therapy with continuous drip of antibiotics is mandatory.
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T a&m*p,g n f (Arbo) Aedes Aegypti EBF Aedes Albopictus w (Classic Dengue) Scm; o & b j r f f t a at G & D n h v u Q % m r m (Haemorrhagic Manifestations) / a o G m t w G F y / ecript (Haemostasis) / a o G s y m u m r m y & u f a v sm n j c f (Thrombocytopenia) Eshao G w G F y j i f m w y r h m j c f (Haemocoencentration) p o n w a m j i p z m n f ? T a&m*p, n f t a o w m t m & B o w G F r b y w j b p y a a m o y j y c k p y D (3) EBF 5, EBF 5 av ; r s m w G F a&m*p g z p y 6 b r E g F a m u m f E F E h a o a s m u f E f f t, t " d t a m f i j v c k p y f x b 6 b r G F o m m a a m o & g w c j p y D A e d & j c f r a t p m u u j c f m j z i h a&m*p g y e t G m n f ? t a a w w m t m & B o w G F a e d e A e g y p t i E F b A e d e s A b l o p i c t u s w 6 o r m c % q v & w a w w w f o n f ! a o G 6 w k a u G m m g G l a s s D (Classic Dengue) S c m ; o & b j r f f t a a G & D n h v u Q % m r m (Haemorrhagic Manifestations) / a o G m t w G F y e c r i p t (Haemostasis) / a o G s y m u m r m y & u f a v s m n j c f (Thrombocytopenia) Eshao G w G F y j i f m w y r h m j c f (Haemocoencentration) p o n w a m j i p z m n f ? T a&m*p, n f t a o w m t m & B o w G F r b y w j b p y a a m o y j y c k p y D (3) EBF 5, EBF 5 av ; r s m w G F a&m*p g z p y 6 b r E g F a m u m f E F E h a o a s m u f E f f t, t " d t a m f i j v c k p y f x b 6 b r G F o m m a a m o & g w c j p y D A e d & j c f r a t p m u u j c f m j z i h a&m*p g y e t G m n f ? t a a w w m t m & B o w G F a e d e A e g y p t i E F b A e d e s A b l o p i c t u s w 6 o r m c % q v & w a w w w f o n f ! a o G 6 w k a u G m m g G l a s s D (Classic Dengue) S c m ; o & b j r f f t a a G & D n h v u Q % m r m (Haemorrhagic Manifestations) / a o G m t w G F y e c r i p t (Haemostasis) / a o G s y m u m r m y & u f a v s m n j c f (Thrombocytopenia) Eshao G w G F y j i f m w y r h m j c f (Haemocoencentration) p o n w a m j i p z m n f ?
Dengue Haemorrhagic Fever – (D.H.F.)

It is an arbovirus disease, transmitted by a mosquito’s bite: Aedes (In South-East Asia: Aedes aegypti and, often, Aedes albopictus), distinguished from classic DENGUE by haemorrhagic manifestations, including abnormalities of hemostasis, thrombocytopenia and haemoconcentration.

It is a constant problem in South-East Asia considering it is a major cause of child morbidity and mortality, in children ages 3 to 5.

1. Cause

Unfortunately, the cause is still not clear. We know D.H.F. is an arbovirus disease belonging to the group of four dengue virus serotypes. It is currently described as having an immunopathologic basis.

It occurs when multiple types of dengue are simultaneously or sequentially transmitted. D.H.F can occur during primary dengue infection but it is thought that the disease occurs as the result of two successive infections with different dengue serotypes. The first infection sensitizes the patient to the second, producing a severe response. Infection with dengue virus 1, 3, or 4, followed by an infection by dengue virus 2, may be especially important in the development of the disease. A period of about six months or even up to a few years between the two infections, has been thought to be necessary for D.H.F to occur.

2. Prevalence

Studies in Thailand have estimated the frequency of D.H.F as 11 cases per 1,000 secondary dengue infection.

3. Pathology

We observe:
(A) Capillary damage with:
- increased capillary permeability resulting in leakage of fluid,
- haemoconcentration decreasing blood volume,
- reduced tissue perfusion and oxygenation
- disseminated intravascular coagulation (DIC), disorder characterized by reduction in the elements involved in blood coagulation, particularly thrombocytes due to their utilization in widespread blood clotting within the vessels.

(B) Minimal to moderate haemorrhages are seen in the upper gastrointestinal tract.

(C) The liver shows necrosis of parenchyma and Kupffer's cells with fatty changes.

(D) Petechial haemorrhages are common in the inter-ventricular spectum of the heart and of the pericardium; equally, on the sub-serosal surfaces of major viscera.

(E) The kidneys rarely show glomerulo-nephritis.

(F) There is a reticulo-endothelial reaction with proliferation of lymphocytes and increase in phagocytosis.

4. Clinical Manifestations

Illness begins suddenly but classical dengue symptoms persist for only a short period, typically 2 – 5 days.
We can notice:
- fever
- cough
- pharyngitis
- headache
- anorexia
- nausea.

A shock syndrome with abdominal pain, which is often severe, develops suddenly. In contrast with classic dengue, myalgia, arthralgia and bone pain are unusual.
Grade I - ao 6 cm above knee (10 cm above or below knee) Tourniquet test

Grade II - Grade I w/ 6 cm above knee

Grade III - Grade II w/ 1 cm above knee

Grade IV - 1 cm above knee

Dexamethasone 1 mg IV (10 mg/100 mg)

Aldosterone 0.1 mg IV (10 mg/100 mg)

D-5-W 50 ml normal saline

Ringer Lactate 10 ml normal saline

Normal saline 50 ml normal saline

(10 ml) 5% Dextrose in Water

(100 ml) 5% Dextrose in Water

Normal saline 50 ml normal saline

Dexamethasone 1 mg IV

Aldosterone 0.1 mg IV
5. Physical Signs
- fever, from 38.5° to 40° C and more
- restlessness
- sweating
- low blood pressure
- petechiae, ecchymoses and spontaneous haemorrhages

6. Examination
- tender enlargement of the liver = sore ‘hepatomegaly’
- palpable lymph node
- swelling of the tonsils
- cold moist extremities
- warm trunk
- pallid face with cyanosis of the lips
- petechiae on the forehead and distal extremities in 50% of the cases
- macular or maculopapular rash may be seen occasionally

7. Evolution
In the most severe cases, coma, convulsion and unresponsive shock are terminal manifestations in the fourth or the fifth days. Following this critical period, survivors show steady and rapid improvement. Convalescence is fairly rapid in the children who recover from D.H.F.

8. Diagnosis
WHO has established criteria for the diagnosis of D.H.F.:
- acute continuous fever lasting for more than 2 days
- haemorrhagic manifestation on the skin or gastrointestinal tract
- a positive tourniquet-test
- enlargement of the liver
- blood disorders thrombocytopenia haemocoencentration
- haematocrit increased by > 20%

WHO’s classification according to severity is
Grade I: fever, Dengue basic symptoms, positive tourniquet-test.
Grade II: grade I, with spontaneous bleeding in the skin, gums, gastrointestinal tract and other sites.

Grade III: grade II, with circulatory failure and agitation
Grade IV: profound shock with undetectable blood pressure and pulse.

9. Prevention
Vector control is the only method available to prevent D.H.F.

10. Treatment
The careful management of fluid and electrolyte balance from the onset of disease is the most important facet of treatment.
Give OXYGEN: useful at first
IV. DRIP with D5W in half-strength normal saline:
(half strength normal saline solution is normal saline that is diluted 50:50) From 50 to 80 and even 100 ml/kg body weight/daily. You can start by infusion in one hour of 10 ml/kg of Ringer Lactate. Blood Transfusion is not recommended in the hypotensive phase during haemoconcentration but may be given to control bleeding or after recovery from shock if signs of severe haemorrhage.

Dexamethasone: 1 mg/kg body weight/24 hours and/or: Aldosterone: 0.1 ml/kg daily.

All other drugs, particularly antibiotics, are not indicated. Diuretics and digitalization may be necessary in case of hypervolemia during the fluid reabsorptive phase. Efficacy of new antiviral drugs requires confirmation in the treatment of D.H.F.

Conclusion
Vector control is, by far, the best way to fight D.H.F. The methods are identical to those used in malaria vector control, individual or family mosquito nets soaked with repellent - rooms protected by screens - methods of insecticide spraying or fogging - elimination of all mosquito breeding sites: Aedes (and by opportunity Culex and Anopheles)
Differentiation of Classical Dengue and Dengue Haemorrhagic Fever

**Classical Dengue**
- Prodrome of fever
- Pharyngitis
- Severe headache
- Ocular pain and tenderness on pressure
- Vomiting
- Abdominal pain
- High fevers
- Myalgias
- Bone pain
- Maculo papular (day 3-5)

**Dengue Haemorrhagic Fever**
- Fever (Acute onset, continuous for 2-7 days)
- Haemorrhagic Manifestation (Petechiae, purpura, epistaxis)
- Thrombocytopenia
- Hemoconcentration (20% have increase haematocrit)
This magazine is yours and you are strongly recommended to participate by sending your articles. Each article must be accepted by the Editor before publication. We reserve the right to change or simplify the article. Please send contributions to:

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Tel: 02 656 9370
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E-mail: hmess@loxinfo.co.th.

Each medical article must fit in with only one of the following topics:
- Diagnosis
- Prevention
- Case Study
- Treatment
- Sanitation
- Health Education
- Laboratory
- Maternal and Child Health
- Social
- General Health
- Interview

Non-specific medical articles can be accepted too.

e.g., From the field

Size
As far as possible, articles should be between 2-6 pages of 2000 characters each page (space included).

Style and contents
Articles should be written in simple and clear English, French, or Burmese. Difficult words must be explained in a glossary.

Each article must always contain a title; the name and qualification of the author; picture, drawings or ideas for them; boxes summarizing the important parts, references.
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1) **A Platelet** is a disk-shaped structure, 2 to 4 micrometer diameter,
   (a) without a nucleus (nucleus is a spheroid body within a cell consisting of:
   - a thin nuclear membrane,
   - one or several nucleoli,
   - fine net-like threads bearing diffuse irregular granules of chromatin.)
   (b) and without D.N.A, (deoxyribonucleic acid = a nuclear acid that constitutes the genetic material of all cellular organisms and the D.N.A. viruses)
   (c) containing active enzymes and mitochondria. Platelets are found in the blood and chiefly known for their role in blood coagulation. In medical book they are also called: **Thrombocytes**

2) **Thrombocytopenia** considering the normal circulating platelet rate:
   150 to 300 x 10^9 per litre of blood, (10^9 = 1,000,000,000 platelets), thrombocytopenia is asserted when there is a fall to around 50 x 10^9 in circulating platelets (platelets = thrombocytes).
   Thrombocytopenia: may come from
   - failure of production,
   - increased destruction and/or utilization
   - occasionally dilution concerning the platelets,
   - thrombocytopenic disorder where platelet sequestration from consumption of platelets by splenic macrophages occurs due to an enlarged spleen.

   Each of these disorders may produce various patterns of bleeding such as
   - petechiae (small superficial blood spots in the skin)
   - scattered small ecchymosis (deeper blood infiltration into the skin), spontaneous or caused by a minor trauma at any site,
   - and mucosal bleedings (nose, mouth, gastrointestinal and genitourinary tracts, the most often, but also into the Central Nervous System with, sometimes, life-threatening manifestations).

**Causes of Thrombocytopenia**

**Infections** (by disseminated intravascular coagulation)
- Malaria
- Dengue Haemorrhagic Fever
- Human Immuno-deficiency Virus
- Gram-negative Septicemia
- Miliar T.B
- Infectious Mononucleosis
- Many other infections such as:
  - Kala Azar
  - Trypanosomiasis
  - Schistosomiasis

**Immune**
- Acute/Chronic Idiopathic Thrombocytopenic Purpura
- Drug-induced Immune Thrombocytopenia (heparin, thiazide diuretics, quinidine, gold salts, carbamazepine and so on).
- Post transfusion Purpura
- Chicken-Pox, Rubella (German measles), Measles, Mumps, and other viral infections

**Bone Marrow Disorders**
- Marrow Hypoplasia
- Leukaemia
- Aplastic Anaemia following infectious hepatitis
- Megaloblastic Anaemia
- Myeloma
- Myelofibrosis
- B12 and/or Folate (folic acid) and/or Iron Deficiency

**Hemolysis**
- Microangiopathic Anaemia
- Thrombotic Thrombocytopenic Purpura

**External Causes**
- Trauma and Burns

**Specific Splenomegalic Syndromes with Thrombocytopenia**
- Congestive Splenomegaly (Banti’s disease): from
  - Hepatic Cirrhosis
  - Portal or Splenic Vein Thrombosis
1. The Mitral Area
- (Systole)
- (Diastole)

2. The Tricuspid Area

3. The Aortic Area

4. The Pulmonary Area

5. The Mitral Valve
6. The Tricuspid Valve
7. The Aortic Valve
8. The Pulmonary Valve

(Mitral Valve) (Tricuspid Valve) (Pulmonary Valve) (Aortic Valve)
Auscultation of the Heart

Medics may experience difficulties about the auscultation of the heart. As with other clinical examination, it requires a great deal of practice and daily repetition. The skilled health worker listens for particular findings, focusing attention on some part or other of the cardiac cycle. An useful, vital understanding of the events of the cardiac cycle is an essential basis for auscultation. It is very important to identify correctly systole and diastole; improvisation is not a reliable guide; you do not become a health worker just like that.

Usually, some auscultatory areas of the heart are called by the name of the valve from which murmurs and sounds arise:

1. **The Mitral Area** (M): which corresponds to the apex beat
2. **The Tricuspid Area** (T): which corresponds to the left side of the lower sternum
3. **The Aortic Area** (A): which lies just to the right side of the sternum in the second intercostal space.
4. **The Pulmonary Area** (P): which is to the left of the sternum in the second intercostal space.

Of course auscultation of the heart should not be confined to these areas, and sounds heard in a particular area do not necessarily come from that particular valve. For instance, sounds and murmurs originating at the aortic valve are frequently best heard at the mitral area. Only practice can give you the right use of the various areas to help you.

Areas for auscultation of heart.

### The Cardiac Cycle

Normally, the onset of left ventricular systole precedes the onset of pressure rise in the right ventricle. The mitral valve therefore closes before the tricuspid valve. Because the pulmonary artery diastolic pressure is lower than aortic diastolic pressure, the pulmonary valve opens before the aortic valve. It follows that pulmonary ejection sounds occur closer to the first heart sound than do aortic ejection sounds. During systole, the pressure in the ventricles slightly exceeds the pressure in the corresponding great arteries. Towards the end of systole the ventricular pressure falls below the pressure in the great arteries and when diastolic pressure is reached the semilunar valves close. Normally, aortic valve closure recedes pulmonary valve pressure. The mitral and tricuspid valves begin to open at the point at which the ventricular pressure falls below the corresponding atrial pressures.

As we just saw, at the onset of ventricular systole, the mitral and tricuspid valves close consecutively to give the first heart sound. Opening of the pulmonary and aortic valves occurs next and it is normally inaudible. The closure of the pulmonary and aortic valves gives rise to the two components of the second sound. It will be seen that because of the lower pressure in the right ventricle compared with the left, closure of the pulmonary valve follows that of the aortic valve. After a brief period, the mitral and tricuspid valves open inaudibly in the normal heart.
Ferrous Sulphate
Folic acid
The Mother's Health Care After Childbirth

Diet
The mother should eat every kind of nourishing, nutritious, easily digestible, and non-spicy foods she can get. Especially eggs, fish, chicken, all cereals (such as rice, corn, barley flour), fruits (bananas and all local fruits), cooked vegetables.

No alcohol, no coffee, no tobacco A little light tea is OK. She should drink a lot because her milk is made essentially of water; from the second week, she has to drink 500ml to one litre more than usual. In fact, she has to drink around three litres a day, especially if she has a fever or sweats profusely. If the mother has lost a great deal of blood, she has to take ferrous and folic acid for one month, at least.

Cleanliness
Bathing is neither harmful nor dangerous after childbirth. Mothers can use soap to wash her private parts except for the breasts; they have to be washed with boiled warm water. In the first two weeks it is better if she bathes with a wet warm towel.

Breast Feeding
Mother’s milk is very good for the baby. So, AS SOON AS POSSIBLE, PUT THE BABY TO THE MOTHER’S BREAST.

Beginning breast feeding early is extremely important because the mother’s first milk contains everything a neonate needs in proteins (proteins are the principal constituents of all human cells which are the fundamental unit of our organism) and mother’s anti-infective antibodies which are the most effective means to prevent and fight against possible newborn’s infection.

When a baby is unable to suck effectively and take much milk, it is necessary that the mother keep milking the breasts by hand, taking hold of the breast, way back, then moving her hands forward to squeeze the milk out by pressing behind the nipple. Then, she gives it to the baby by spoon or dropper.

Care of the Breasts
Regular bathing will help to keep mother’s breasts clean. The use of soap may cause cracking of the skin, sore nipples, and infection. It is not mandatory to clean breasts and nipples each time mother breast-feeds her baby but it is necessary to make sure that nipples are always dry.

Be careful of cracked nipples and/or possibility to breast infection!

Regarding sore nipples it is very important to keep breast feeding the baby even if it hurts. Cracked nipples develop whether the baby sucks the nipples. It is compulsory to teach her to take the nipple and part of the breast, in fact, taking as much of the breast into her mouth as she can. It is necessary the mother gives both breasts to the child. If one nipple is sore, let the baby suck on the other side first, then the baby can suck from the sore nipple. After the baby is finished, let the milk dry before covering the cracked nipple: the milk will help the nipple heal. If the nipple oozes lots of pus, don’t give it but, imperatively, milk the breast by hand until the nipple is healed.

Sometimes, breasts get very full and hard then painful. This pain will often go away in one day or two if the baby breast-feeds frequently. Usually antibiotics are not needed. But painful breasts with cracked nipples can lead to an infection or abscess (pocket of pus into the breast). A very painful lump is felt. Fever and chills accompany the pain; often, part of the breast becomes hot, red and swollen with lymph nodes (lymph node = small mass or knot containing lymphocytes, body’s defenses competent cells, and serving as a primary regional defense) in the armpit, located along the course of lymphatic vessels from the breast, serving as a mechanism by removing noxious agents such as bacteria and their toxins). A severe abscess may develop.

In conclusion be careful with some mothers: those that are poorly nourished, very young, mentally slow, single and abandoned by family or who already have malnourished and/or sick children. If a health worker or someone else takes special interest in these mothers and helps them find ways to get the food, care, and companionship they need, it can make a great difference in the well being of both the mother and their child. Every health worker must remember that this is part of their duties.
1? **Thrombocytopenia**

(u) ao Gye-k-um t w Gf ao Gkifzpb n f
(c) ao GDrsm ; yd Gkifzpb n f

(*) ao Gw v u t w Gf *Platelets* 100000E6$\pm$50000, 10$^3$ t - u m, jifu bq w w n f
(C) ao Gw v u t w Gf *Platelets* 100000E6$\pm$50000, 10$^3$ x u fen jfcifu bq w w n f
(i) ao G zDrsm c$^d$ w Gji/(t x lo je$^t$ aox mG Gf *Thrombocytes* c$^d$ w Gji/)

2? **Tourniquet-test**

(u) ao Gw 66 k$^u$ G&m*Gif; ba:z w &mw Gft o H$^i$ako m prfo yf w ckzpb n f
(c) ao G jiku $\^{\diamond}$zpbw b$^o$ ma u m$^a$ ao G 66 k$^u$ G&m*Gf w Gfa, 60$^2$ t y$^o$ m t E W &m, f, $^6$ h

(*) v v Gcif u t w &mw Gf *Tourniquet* w y$^i$ t x o H y$^o$ m t o H$^i$o k! m prfo yf w rd$^d$zpb n f
(C) ao kyG65w u f t o H y$^o$ m prfo yf w k! f w a q m t a-pm c$^d$ w k! m t w Gft o H y$^e$ k$^f$ w Gif G$^a$ k$^i$ m r prfo yf w rd$^d$zpb n f
(i) ao G Gf u k k$^c$fr, yr$^d$, yv $^t$eft r$^t$ w u f, f $^i$ y$^o$ m prfo yf w rd$^d$zpb n f

3? jiyi ex ebo G$^w$ $^e$mcif u wat mu f$^w$ w t eu fSt ajc t aew ck Gfaw G Ebb n f

(u) u w 66 u w $^f$maeu $^q$ (M2) w w Gft c$^f$ sfa, S a&mu k$^i$fr/
(c) ES k$^e$ ef v ef u m, u G$^o$ m; {&dm mw Gfao $^G$wr f$, $^b$ p$^i$E$^E$ H m, u G$^o$ m, y$^u$fD; jci;/

(*) jiyi ex ebo m t w u $^a$m$^w$mcj$^p$ci;/
(C) t Ox G$^k$fr/
(i) OfAw f u G$^o$ mc$k$G$^p$ao m t y$f$yf, u G$^o$ m&am$^w$mcj$^p$ci;/

4? **D.N.A.**

(u) $^D.D.T.$ lr $^b$ pmx $^b$ H y$^o$ m t w e6 i$^h$ q q$^f$ H$^f$ f$^w$ w a$^q$ ; w $^r$ $^d$zpb n f
(c) u $^i$ mc$^a$m$^g$ ky $^u$ &mn Gft o H y$^o$ m a$q$ ; w $^r$ rd$^d$zpb n f

(Platelets) t w Gft r$^t$ w u , f$^v$ H y$^o$ m $^j$y$^p$iv w rd$^d$zpb n f
(C) t ar $^d$ e$^E$if Ht r$^d$o m$b w$ f z$^g$. y$x r$^t$ w ef$p$ tmo H re$^b$ bq w w n f
(i) Deoxyribonucleic t u $^q$ p$^e$pb n f

5? o$^b$ n fr ao ; t z$^6$ p $^*$, w p$^w$ f$^b$ $^b$ m u $^w$rm m&;0e$^k$ r$^w$ ODj$^p$ gy v m? o$^b$ n fa$^m$g y $^d$ 0 ao a cm$c$y

(u) $\alpha$ ;0gg w j$^q$fru $^y$g
(c) j$^p$H$^f$ $^f$byt t aw G$t$, u $^b$lo s$^a$ m a$q$ ; $^r$, w ODDE$^h$aq $^a$EG$h$

(*) t m$^f$ i$^d$ k$^d$rm u $^f$ $^d$ $^b$ h$^r$ m$^f$ i$^s$ $^b$ $^i$h$^a$m$^g$ $^r$d$^x$ u $^f$ $^y$ $^m$ $^s$ $^u$ $^f$ $^i$pa$^o$ m y, $^Z$Da$^q$ ; u $^w$y$^y$g
(C) $^a$ $^q$ ; $^r$, $^b$ $^h$ $^b$ [ e$^q$ m i$^f$Dr$^n$ $^o$ $^b$ $^q$ ; $^r$ Sray; y$^g$Sh
(i) u u $^E$ H m$^i$ $^i$h$^a$m$^g$ $^d$ $^w$ $^d$ $^E$ $^y$ $^m$ $^u$ $^f$ $^i$pa$^g$ et w G fAD mri$^b$q ; Og/ aznv p$^f$ u $^q$ p$^E$Sh$^y$f

q m w $^d$ w $^d$ day;yg
Ten Questions

1. Thrombocytopenia is
   a) a venous thrombosis.
   b) a deformation of red cells.
   c) between 100,000 to 150,000 platelets $\times 10^9$ / blood litre.
   d) less than 50,000 platelets $\times 10^9$/blood litre.
   e) a lack of white cells, particularly T Lymphocytes, in the blood.

2. The tourniquet-test is
   a) a useful test to diagnose Dengue Haemorrhagic Fever.
   b) a dangerous test to avoid in Dengue Haemorrhagic Fever because of bleeding.
   c) a useful test before putting a tourniquet in finger amputation.
   d) no medical use but interesting in minor surgery.
   e) absolutely necessary before blood transfusion.

3. Acute abdomen is seen
   a) in placenta praevia in the last two months of pregnancy.
   b) in myocardial infarction located in the diaphragmatic area.
   c) in acute appendicitis for example.
   d) in obese patients.
   e) in tropical myositis located into the abdominal wall.

4. D.N.A is
   a) a moderately toxic pesticide used in place of D.D.T.
   b) a drug used in cancer chemotherapy.
   c) an essential element of the platelets.
   d) the first grade in the D.N.B (Diplomate of the National Board) in the USA.
   e) Deoxyribonucleic acid.

5. Are you a scrupulous health worker?
   When you are not sure of the diagnosis:
   a) You give any “dummy” medical treatment.
   b) If possible, you speak about the case with a more experienced medic.
   c) You give a broad-spectrum antibiotic hoping it will be effective.
   d) You don’t give anything pretending you do not have an available drug.
   e) You give Multivitamin, Ferrous and Folic acid hoping for a cure by the body’s defences.
8? t a, S aw mif m, w Giw káu Gb. , áq miá o nt ámfr= 
( u) r m;jzpb n f 
(c) Aedes jicif rât pt; jzpbn f 
(* ) o efzpb n r 
(c) C uksx jicif rât pt; jzpb n f 
(i) Anopheles jicif rât pt; jzpbn f 

9? w káu Gámâ gm n f 
( u) b u w DG m a - u mi hjzpá o ma & m g jzpbn f 
(c) r (Fungal)- u mi hjzpá o ma & m g jzpbn f 
(*) Af fá yók- u mi hjzpá o ma & m g jzpbn f 
(c) o e b- u mi hjzpá o ma & m g jzpbn f 
(i) y, w Gáu ýýyj (Protozoa) a - u mi hjzpá o ma & m g jzpbn f 

10? y, ZDag ; Qgrn f o nat mu gu gâmâ gm t eu fa & m g yu rfr G u seb & m g smw Gft en f Esb rs m; t med ifx â & mu f + , šg n f 
( u) i š ž sma&m g 
(c) OáéEu éMá - u m t a, r, áãmá & m g 
(*) ao Oá éG yáu gá mâ g 
(c) t a & my w Gzpá o mt jy mu G f lo òo m t t a & ym; t jy mu Gón f ao Gpá o mt &mav sm n f i jzpêif a r, mi h ( w áy? jiy t eá o mu u pu ámâ gw câ mi hjzpá w ón f) 
(i) ao Oá éGó m pu m u u ft zsmâ & m g (Scarlet fever) 

(ar; c Gfrsm, t ajérsm; u daemu k w bôr! hr+ â Zif t r w (2) w Gfaz: ýy gn f)
6. Could you see a purpura after transfusion?
   a) never.
   b) only in case of a mistake about the blood group.
   c) always if patient has a skin disease such as naevi.
   d) in some cases by immune reaction.
   e) only in neonate patients.

7. The severity of a burn is related to:
   a) a lack of melanocytes (cells of the epidermis containing a dark pigment called melanin, within the melanocyte).
   b) the surface of the burnt area.
   c) the sex of the patient, because females heal faster than males.
   d) the blood group, O group being the best group for healing.
   e) a lack of platelets (thrombocytes).

8. In South East Asia, the Dengue vector is
   a) a tick.
   b) a mosquito type Aedes.
   c) a flea.
   d) a mosquito type Culex.
   e) a mosquito type Anopheles.

9. Dengue is
   a) a bacterial disease.
   b) a fungal disease.
   c) a viral disease.
   d) a helminthic disease.
   e) a protozoal disease.

10. Antibiotics are an effective treatment in all of the following diseases except one:
    a) Malaria.
    b) Cerebrospinal meningitis.
    c) Dengue Haemorrhagic Fever.
    e) Purpura fulminans.
    f) Haemorrhagic Scarlet fever.

YOU WILL FIND THE ANSWERS IN THE NEXT ISSUE (NUMBER 2)
Many people are afraid of communicating with someone at the end of his or her life. They do not want to express their sadness. It can seem awkward and disturbing. When you are faced with the reality of death, you need to face your own feelings honestly.

But you do not need to hide your feelings, first of all, just be yourself. If the patient is a friend or a relative, hug and touch this human being as much as usual. If you have always joked together, carry on without losing your sense of humour, but let the person talk about whatever he or she wants to discuss. He or she may never bring up the subject of his or her impending death. Whether the person knows or not, you do not reveal information he or she is not aware of.

Perhaps the best you can do when in conversation with the terminally ill is to listen. The health worker must realise is to realize that the patient does not expect or want behaviour any different from the way he or she usually is.

A health worker must behave naturally, without being worried about the moment of death will arrive. He or she must tend and nurse as he or she is used to doing. But it may be easier to be supportive if they are prepared in advance. As important as learning to nurse and help the recovery of a patient is also learning the type of care a dying person has to receive. May be, learning to behave correctly is different whether the health worker has or not the willing to do!
Note:

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