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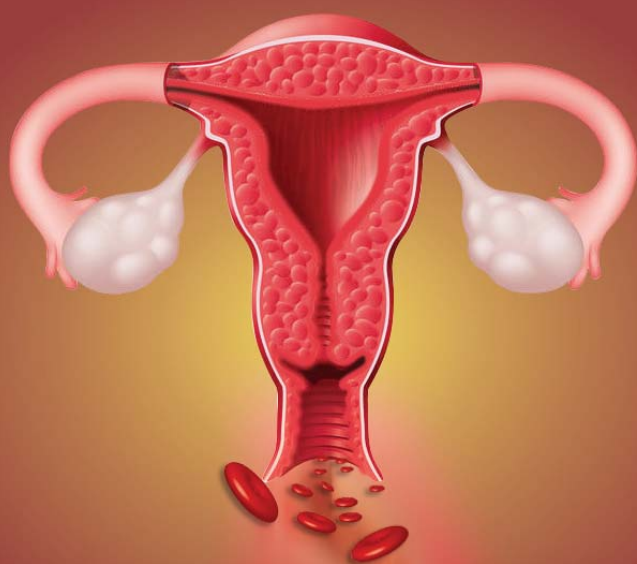


MEDICUS

The essence of medical practice

Volume 10 Issue 2

Dysfunctional Uterine Bleeding



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Editorial

Dear Doctor,

Welcome to this Issue of Info Medicus.

In this issue, we have feature on "Dysfunctional Uterine Bleeding (DUB)" as Review Article. DUB usually occurs without recognizable pelvic pathology, general medical disease or pregnancy. About 20% of women experience irregular cycles in their lifetimes where DUB is the major concerns behind this irregular cycles. Here we have highlighted the causes, risk factors, types and management of DUB.

Medical Literature and its core Evidence Based Clinical Practice are one of the modern methods of updating knowledge for the clinicians. For this reason we have included an article on "Essentials of Evidence Based Clinical Practice" in Clinician's Corner. This article will help you in approaching to diagnosis, treatment and prognosis of the patient in your daily practice.

In Visual Diagnosis section we have incorporated some pictures with four options of their diagnosis to recapitulate your memory, which, we hope will be an enjoyable exercise for you.

In this issue we have also tried to present a case on "Stickler syndrome associated with congenital glaucoma" in Case Review. Stickler syndrome is a dominantly inherited type of progressive hereditary ophthalmorhopathy due to collagen connective tissue disorder. For successful management of patients, early recognition of the syndrome and a multidisciplinary approach are prerequisite.

In clinical method some information about "Gastrointestinal endoscopy" along with the procedure is also given.

Besides these, regular sections are presented as usual. We hope this issue will be more informative and useful to you.

We will appreciate your continuous feedback regarding "Info Medicus" that in turn will help us in constant upgrading of our services.

On behalf of the editorial board, we wish you "শুভ নববর্ষ -১৪২০" !

Thanks and best regards,

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Dysfunctional Uterine Bleeding (DUB)

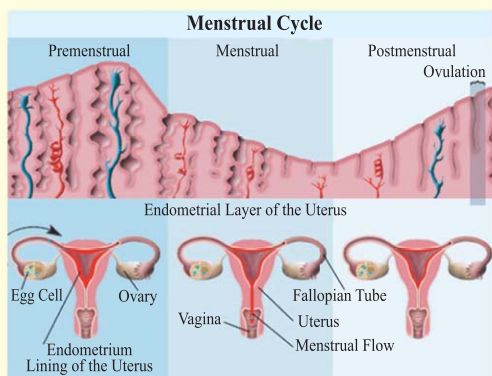
Dysfunctional Uterine Bleeding (DUB) is abnormal genital tract bleeding based in the uterus and found in the absence of demonstrable structural or organic pathology. It reflects a disruption in the normal cyclic pattern of ovulatory hormonal stimulation to the endometrial lining. DUB occurs most often shortly after menarche and at the reproductive years. Though 20% of women



experience irregular cycles in their lifetimes but about 20% of cases are adolescents & 50% of cases in 40-50 year olds. The bleeding is unpredictable in many ways. It might be excessively heavy or light, prolonged, frequent, or random. This condition usually is associated with anovulatory menstrual cycles but also can present in patients with oligo-ovulation. DUB occurs without recognizable pelvic pathology, general medical disease, or pregnancy.

Normal menstrual cycle

The menstrual cycle is regulated by a complex interaction of the hypothalamus, the anterior pituitary gland, the ovaries, and various target tissues, such as the endometrium. Normal menstrual function consists of two distinct phases, with estrogen and progesterone, hormones produced by the ovaries, playing key roles:



ovarian follicles containing immature ova grow in this phase of the menstrual cycle. These follicles release estrogens that act on the uterus and cause the endometrium to become thick and vascular and proliferate. The corpus luteum develops from an ovarian follicle during midcycle, using estrogens and progesterone it produces to maintain its structure.

- The secretory phase begins when an increase in progesterone triggers ovulation. If the ovum isn't

fertilized, the corpus luteum will atrophy and estrogen and progesterone production will decline. The endometrium breaks down and menstruation occurs.

Causes

There are many causes of irregular and frequent menstruation. Benign causes include stress, excessive exercise, medications or perimenopause. More serious causes include diseases of the pelvic organs especially those with hormonal disturbances like polycystic ovarian disease.

Risk factors

- Age under 20 or over 40
- Overweight (because hormones involved in ovulation aren't readily available from fat stores) or extreme weight loss or gain
- Excessive exercise, which decreases body fat to a degree that's inadequate to maintain the menstrual cycle
- High stress levels
- Polycystic ovarian syndrome

Types of DUB

Ovulatory bleeding (10%)

■ Polymenorrhea and Polymenorrhagia

The term polymenorrhea is used to describe a condition when women have periods at much shorter intervals, usually less than 21 days apart. It can be a frustrating thing to endure, and periods may not be regular or predictable either. It also may affect fertility or attempts to get pregnant because ovulation may occur sooner than expected, possibly even when a period is ongoing. Here the ovary goes through its normal cycle but does so more quickly, the acceleration affecting the follicular rather than the luteal phase. Sometimes more than one follicle ripens at a time and there may be small follicular cyst presents as well. The endometrium also goes through the usual phase but its proliferation increases and menstruation takes place every two or three weeks.

It is sometimes difficult to distinguish polymenorrhea from spotting or metrorrhagia; however, bleeding that occurs at regular intervals less than 21 days apart is usually polymenorrhea.

Sometimes cause of polymenorrhea can't be identified. On the other hand, cause of polymenorrhea may be easy find and may be related to certain medical conditions. Some of them are quite serious. Women with endometriosis may experience this condition. It can also be a symptom of the very serious pelvic inflammatory disorder. Alternately, it may indicate presence of sexually transmitted diseases including chlamydia and gonorrhoea. In fact, the majority of causes of polymenorrhea and polymenorrhagia and therefore of dysfunctional bleeding occurs among women aged 30-40 years and the symptoms are related to childbearing rather than a particular pregnancy and delivery. These women also tend to suffer from the premenstrual syndrome, irritable bowel syndrome, and other manifestations of a background of stress. It appears that the stress induce situations are due to either a higher cortical effect on the hypothalamic releasing factors or the effect of neurohormonal substances from the central nervous system directly on the uterine vasculature.

■ Menorrhagia

Menorrhagia is defined as excessive uterine bleeding occurring at regular intervals or prolonged uterine bleeding lasting more than seven days. The classic definition of menorrhagia (i.e. greater than 80 mL of blood loss per cycle) is rarely used clinically and average menstrual blood loss is between 30 and 40 mL per cycle.

Heavy or prolonged menstrual losses at normal intervals can be the result of corpus luteum defects which present in the following ways.

- **Irregular ripening of the endometrium:** It occurs due to poor formation and function of the corpus luteum. The endometrium is without adequate hormonal support so slight losses or spotting occurs for many days before the proper flow starts. The conditions are analogous to the breakthrough bleeding which often attends the administration of estrogen-progesterone preparation. It is diagnosed by finding only patchy progestational changes in endometrium during menstruation. More reliable evidence is the repeated finding of low serum progesterone levels during the second half of the cycle. The patients having previously had a regular cycle complains that she started to bleed again a few days after the cessation of a period. This bleeding continues intermittently until the next period and there after all symptoms disappear. Presumably the follicle is faulty in some way in these cases and once its activity ceases and that of a new commences, the symptoms disappear.

- **Irregular shedding of the endometrium:** It occurs due to incomplete and slow degeneration of the corpus luteum (Halban's diseases). Here slight bleeding continues intermittently for several days after the proper flow and patchy progestational appearances persist in an endometrium which should be in the early proliferative phase.

Anovulatory bleeding (90%)

Anovulatory DUB, which accounts for about 90% of cases, is common in women at the beginning or end of their reproductive life. Anovulatory DUB is recognized as irregular, prolonged and usually excessive bleeding caused by a disturbed function of the hypothalamic-pituitary-ovarian axis.

In anovulatory DUB, estrogen is continually secreted but an ovum never ripens in the follicle. Because an ovum isn't released, the corpus luteum fails to produce progesterone to counteract uterine lining proliferation and the patient experiences irregular and possibly heavy bleeding. In the absence of ovulation, she won't experience typical menstrual and premenstrual signs and symptoms, such as cramping, mood changes, and breast tenderness. However, the effects of unopposed estrogen on the uterine lining have been directly linked to endometrial hyperplasia and cancer. Anovulatory cycles are associated with a variety of bleeding manifestations. Estrogen withdrawal bleeding and estrogen breakthrough bleeding are the most common spontaneous patterns encountered in clinical practice. Iatrogenically induced anovulatory uterine bleeding might occur during treatment with oral contraceptives, progestin-only preparations, or postmenopausal steroid replacement therapy.

■ Estrogen breakthrough bleeding

- Anovulatory cycles have no corpus luteal formation. Progesterone is not produced. The endometrium continues to proliferate under the influence of unopposed estrogen.
- Eventually, this out-of-phase endometrium is shed in an irregular manner that might be prolonged and heavy. This pattern is known as estrogen breakthrough bleeding and occurs in the absence of estrogen decline.

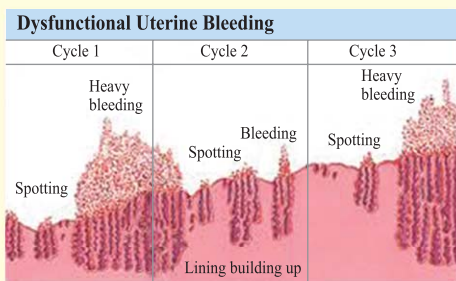
■ Estrogen withdrawal bleeding

- This frequently occurs in women approaching the end of reproductive life.
- In older women, the mean length of menstrual cycle is shortened significantly due to aberrant follicular recruitment, resulting in a shortened proliferative phase. Ovarian follicles in these women secrete less estradiol.

Fluctuating estradiol levels might lead to insufficient endometrial proliferation with irregular menstrual shedding. This bleeding might be experienced as light, irregular spotting.

- Eventually, the duration of the luteal phase shortens, and, finally, ovulation stops. Dyssynchronous endometrial histology with irregular menstrual shedding and eventual amenorrhea result.
- Oral contraceptives, progestin-only preparations, or postmenopausal steroid replacement therapy

- Treatment with oral contraceptives, progestin-only preparations, or postmenopausal steroid replacement therapy might be associated with iatrogenically induced uterine bleeding.



- Progesterone breakthrough bleeding occurs in the presence of an unfavorably high ratio of progestin to estrogen.

- Intermittent bleeding of variable duration can occur with progestin-only oral contraceptives, depo-medroxyprogesterone, and depo-levonorgestrel.
- Progesterone withdrawal bleeding can occur if the endometrium initially has been primed with endogenous or exogenous estrogen, exposed to progestin, and then withdrawn from progestin. Such a pattern is seen in cyclic hormonal replacement therapy.

■ Adolescents

- The primary defect in the anovulatory bleeding of adolescents is failure to mount an ovulatory luteinizing hormone (LH) surge in response to rising estradiol levels. Failure occur secondary to delayed maturation of the hypothalamic-pituitary axis. Because a corpus luteum is not formed, progesterone levels remain low.
- The existing estrogen primed endometrium does not become secretory. Instead, the endometrium continues to proliferate under the influence of unopposed estrogen. Eventually, this out-of-phase endometrium is shed in an irregular manner that might be prolonged and heavy, such as that seen in estrogen breakthrough bleeding.

■ Climacteric

- Anovulatory bleeding in menopausal transition is related to declining ovarian follicular function.
- Estradiol levels will vary with the quality and state of follicular recruitment and growth.
- Bleeding might be light or heavy depending on the individual cycle response.

■ Bleeding disorders

An international expert panel including obstetrician/gynecologists and hematologists has issued guidelines to assist physicians in better recognizing bleeding disorders, such as von Willebrand disease, as a cause of menorrhagia and postpartum hemorrhage and to provide disease-specific therapy for the bleeding disorder. Historically, a lack of awareness of underlying bleeding disorders has led to underdiagnosis in women with abnormal reproductive tract bleeding. The panel provided expert consensus recommendations on how to identify, confirm, and manage a bleeding disorder. An underlying bleeding disorder should be considered when a patient has any of the following:

- Menorrhagia since menarche
- Family history of bleeding disorders
- Personal history of 1 or more of the following:
 - ◆ Notable bruising without known injury
 - ◆ Bleeding of oral cavity or gastrointestinal tract without obvious lesion
 - ◆ Epistaxis greater than 10 minutes duration

If a bleeding disorder is suspected, consultation with a hematologist is suggested.

Symptoms of DUB

Symptoms of dysfunctional uterine bleeding may include:

- Bleeding or spotting from the vagina between periods
- Periods that occur less than 28 days apart (more common) or more than 35 days apart
- Time between periods changes each month
- Heavier bleeding (such as passing large clots, needing to change protection during the night, soaking through a sanitary pad or tampon every hour for 2 - 3 hours in a row)

- Bleeding lasts for more days than normal or for more than 7 days

Other symptoms caused by changes in hormone levels may include:

- Excessive growth of body hair in a male pattern (hirsutism)
- Hot flashes
- Mood swings
- Tenderness and dryness of the vagina
- Tired or have fatigue due to too much blood loss

Differential Diagnoses

- Abortion
- Adnexal tumors
- Cervical cancer
- Cervicitis
- Chlamydial genitourinary infections
- Ectopic pregnancy
- Endometrial carcinoma
- Endometriosis
- Endometritis
- Gestational trophoblastic neoplasia
- Hyperprolactinemia
- Hyperthyroidism
- Hypothyroidism
- Ovarian polycystic disease
- Uterine cancer
- Vaginitis

Diagnosis of DUB

Diagnosis must be made by exclusion, since organic pathology must first be ruled out.

Diagnosis typically involves a medical history, physical and pelvic examination, laboratory tests, and sometimes imaging tests. A biopsy or a D & C is performed to rule out endometrial hyperplasia or endometrial cancer. For better management of the patient following principles should maintain:

- Below the age of 20 years the disturbances is most likely to be a functional one with a tendency to spontaneous cure.
- In active reproductive life an organic cause for bleeding is more likely, some pregnancy-related condition being the most common.

- After the age of 40 years, functional disorders are common but the possibility of a growth, benign or malignant, must first be excluded.
- After the menopause, a local organic cause (the most important being cancer) is often present and, even if none is found, the possibility shouldn't be dismissed.

Medical history: The medical history involves gathering detailed information about the menstrual pattern. For most women, the interval between, the duration of, and the amount of menstrual flow stay relatively constant through the reproductive age. It may be helpful to keep a "menstrual diary" to monitor differences in the normal menstrual pattern.

Other helpful information includes a list of medications and nonprescription drugs, a sexual history (including pregnancy and contraception information), symptoms of infection and disease (including gynecologic disorders), recent surgery, and a history of injury to the area. Weight loss, eating disorders, stress, and excessive exercise can cause anovulation, leading to DUB, so the medical history should involve these aspects of the woman's lifestyle.

Physical and pelvic examinations: The physical examination focuses on medical conditions that may cause DUB. Examine the thyroid, breasts, liver, and skin for ecchymotic lesions and hirsutism. Obesity may also be a factor.

The pelvic examination involves evaluating the external and internal organs to identify the source and degree of bleeding, determine the size and shape of the uterus, and detect abnormalities.

Laboratory tests

- Complete blood count - Normal in women who report heavy bleeding, or anemia may be severe in women who regularly have heavy periods
- Blood clotting profile - If women have risk factors for coagulation disorders, bruising, or hemorrhage
- Serum FSH, LH, Prolactin are assayed if hyperprolactinaemia or PCOS is suspected to be the cause of anovulation
- Serum Progesterone during the luteal phase
- Urine for pregnancy test

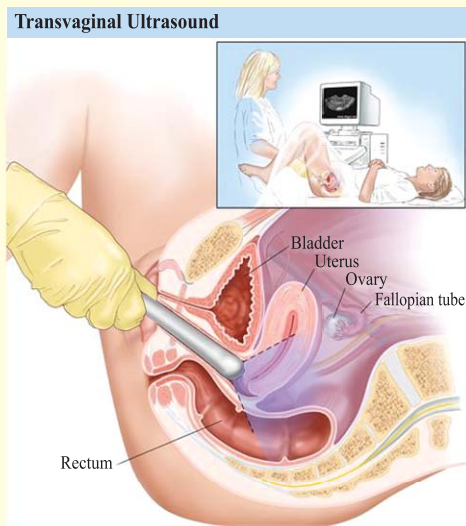
- Thyroid function tests- Should be evaluated in cases of menorrhagia
- Pap smear and culture to look for infection

Other tests may also be done, depending on the circumstances and the differential diagnosis.

Imaging tests

■ Transvaginal ultrasound

Ultrasound produces an image of the endometrium that may make it easier to diagnose certain conditions, such as leiomyomas (benign, fibrous tumors that occur in 40% of women by age of 40 and may cause abnormal bleeding). Diagnosis may involve a technique known as a sonohysterography, which involves injecting a saline solution into the uterine cavity while the transvaginal ultrasound is performed. Saline enhances the ultrasound pictures by acting as a contrast medium, making abnormal structures more visible, and opens up the uterus and separates the uterine walls, making the endometrium easier to see.



■ Hysteroscopy

It is a diagnostic and surgical procedure that makes examining the inside of the uterus possible without making an abdominal incision. During hysteroscopy, a lighted viewing instrument called a hysteroscope is inserted through the vagina and cervix and into the uterus. Treatment can also be done through the hysteroscope during the same procedure.

Hysteroscopy usually takes 30 to 45 minutes. General anesthesia is usually used, although local or spinal anesthesia can be used instead. Patient should not eat or drink for at least 4 to 8 hours before having the test.

The uterus is filled with a fluid, such as normal saline or glycine. The hysteroscope is inserted through the cervix into the uterus so the inner surface of the uterus can be examined. Hysteroscopy can locate the cause of bleeding for many women. Hysteroscopy is done to:

- Locate and evaluate the cause of uterine bleeding, such as uterine fibroids, when blood loss is severe.

- Confirm a diagnosis before the start of treatment with medicines that have significant side effects, such as danazol or a gonadotropin-releasing hormone analogue (GnRH-a).

Results:

Normal - No abnormalities are found

Abnormal - Abnormal tissue growths, uterine fibroids, areas of active bleeding, or scar tissue is found in the uterus.

■ Hysterosalpingography

Where facilities for hysteroscopy are not available, Hysterosalpingography stills plays a role in the diagnosis of uterine polyps or malformations. The procedure should be done between bleeding episodes.

■ MRI

MRI gives very accurate pictures of the uterus and the endometrium. It can identify endometrial lesions, as well as myometrial invasion by endometrial cancer.

■ Angiography and Venography

This are only indicated when a history of deep vein thrombosis in one leg or suspicion of uterine haemangioma raises the possibility of gross abnormality in the vascular apparatus of the uterus.

■ Other study women over age 35

In women older than 35 years, the endometrial cells are examined under a microscope to rule out endometrial hyperplasia and cancer. This is usually done using endometrial biopsy, an outpatient procedure that involves inserting a narrow tube into the uterus through the vagina and suctioning out a small amount of tissue from several areas of the uterine wall. The procedure takes only minutes.

Endometrial biopsy is the most widely used and most effective diagnostic test for detecting precancerous and cancerous cells on the endometrium. A procedure known as a D & C may be used in certain circumstances and involves dilating the cervix and inserting an instrument called a curette into the uterus through the vagina. The curette is used to scrape the uterine wall and collect tissue. It is an outpatient procedure that takes about an hour and requires anesthesia.

The tissue is sent to a laboratory, examined under a microscope, and evaluated for cancerous or precancerous abnormalities. If the biopsy or D & C reveals no abnormality, the patient is treated for DUB, usually with hormones.

Treatment

■ Medical Management

Age, desire to preserve fertility, coexisting medical conditions, and patient preference are essential considerations. For each of the suggested methods, the patient should be aware of the risks and contraindications to allow informed choice.

The degree of patient satisfaction may be influenced by efficacy, expectations, cost, inconvenience, and side effects.

● Non Hormonal

◆ Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

Endometrial prostaglandins are elevated in women with heavy menstrual bleeding. Non steroidal anti-inflammatory drugs (NSAIDs) inhibit cyclo-oxygenase and reduce endometrial prostaglandin levels. Therapy should start at the first day of menstruation and be continued for five days or until cessation of menstruation.

◆ Antifibrinolytic agents

Tranexamic acid, a synthetic derivative of the amino acid lysine, exerts an antifibrinolytic effect through reversible blockade on plasminogen. The drug has no effect on blood coagulation parameters or dysmenorrhea. Tranexamic acid 1 gm every six hours for the first 4 days of the cycle reduces menstrual blood loss by up to 40%.

● Hormonal

◆ Progestins

In case of Adolescents, Immaturity of the hypothalamic-pituitary-ovarian axis predisposes up to one third of adolescents to dysfunctional uterine bleeding. In most adolescents, the bleeding can be controlled with cyclic progestins (medroxyprogesterone acetate, 5 to 10 mg per day for 10 to 12 days of the month). It is important to administer therapy for short periods (three to six months) and then reevaluate the patient. As many as 93% of adolescents with dysfunctional uterine bleeding respond to medical therapy.

In case of perimenopausal Women, Dysfunctional uterine bleeding in perimenopausal women is generally related to declining β -estradiol levels. In this age group, it is particularly important to rule out endometrial atypia and cancer before initiating therapy. However, patient age is not as important as duration of exposure to unopposed estrogens.

Progestins prevent overgrowth of the endometrium, which helps prevent dysfunctional uterine bleeding. (Heavy bleeding is often the product of irregular breakdown of an overgrown endometrium.) Women who aren't ovulating regularly, progestins help restore a predictable monthly menstrual period when given for 10 to 12 days every month.

In case of DUB (Irregular abnormal bleeding during cycle) Norethisterone 5 mg tablet three times daily for 10 days from the day of diagnosis. To prevent recurrence of the condition 1 tablet (5mg) two to three times daily for several cycle (until normalization of cycle) from 19th to 26th day of the cycle.

◆ Combined oral contraceptive pill

The reduction of menstrual blood loss with the combined oral contraceptive pill (OCP) is probably the result of induced endometrial atrophy. A randomized controlled trial of women taking an OCP containing 30 μ g ethinyl estradiol showed a 43% reduction in menstrual blood loss compared to baseline.

◆ Danazol

Danazol, a synthetic steroid with mild androgenic properties, inhibits steroidogenesis in the ovary and has a profound effect on endometrial tissue reducing menstrual blood loss by up to 80%. The most common side effect is weight gain. The recommended treatment is 100 to 200 mg daily for three cycles.

◆ Progestin intrauterine system

Progesterone impregnated intrauterine devices (IUDs) have been used to reduce menstrual bleeding. The newest levonorgestrel intrauterine system (LNG-IUS) is a T-shaped IUD which releases a steady amount of levonorgestrel (20 μ g/ 24 hrs) from a steroid reservoir around the vertical stems of the device.

◆ GnRH agonists

GnRH agonists induce a reversible hypoestrogenic state, reducing total uterine volume by 40% to 60%. GnRH agonists are effective in reducing menstrual blood loss in perimenopausal women, but are limited by their side effects, including hot flashes and reduction of bone density.

■ Surgical Management

Most cases of DUB can be treated medically. Surgical measures are reserved for situations when medical therapy has failed or is contraindicated.

● Dilation & Curettage

An appropriate diagnostic step in a patient who fails to respond to hormonal management. As a rule, apply D&C rarely for therapeutic use in DUB because it has not been shown to be very efficacious.

● Endometrial ablation

Endometrial destruction can be performed by several surgical techniques. Hysteroscopic endometrial ablation with photocoagulation, rollerball, electrocoagulation or loop resection. Several studies with life table analysis up to 6.5 years have shown satisfaction rates of approximately 85%. Patients undergoing surgery after age 40 years appear to have a better outcome. Hysteroscopic endometrial ablation is an effective treatment for the management of DUB unresponsive to medical therapy, with acceptably low complication rates and high patient satisfaction rates when assessed at long-term follow-up. Reoperation rate at five years may be up to 40% with rollerball ablation. Endometrial ablation compares favourably with hysterectomy in randomized trials comparing efficacy and cost, although the long-term analysis should include the cost of further therapy in women who require additional procedures. Recently reviewed, global endometrial ablation an easier, safe, and equally effective alternative to hysteroscopic ablation. Several different devices, some of which are still undergoing feasibility studies or clinical trials, have been introduced, including: hot water intrauterine balloons, intrauterine free saline solution, an electrocoagulating balloon, a 3-D bipolar electrocoagulation probe, a microwave device, a diode fibre laser, and several different cryoprobes. These devices require less operator skill than for hysteroscopic endometrial ablation and no irrigant or distending solutions. All utilize either heat or cold to destroy the endometrium. Although all devices are promising and have produced impressive preliminary results, the long-term efficacy, complication rates, and cost effectiveness have not been established.

● Hysterectomy

Medical experts generally recommend that hysterectomy should not be used to treat dysfunctional uterine bleeding until medical therapy has failed. The cause of the bleeding should be thoroughly evaluated with tests such as an endometrial biopsy before hysterectomy is considered. Hysterectomy is used as surgical treatment for dysfunctional uterine bleeding when:

- ◆ Dysfunctional uterine bleeding does not respond to medicine or other treatment. These options include taking a nonsteroidal anti-inflammatory drug (NSAID) or progestin, using a progestin IUD (Mirena), or endometrial ablation.
- ◆ Childbearing is completed and do not wish to try treatment with medicine.
- ◆ Symptoms of dysfunctional uterine bleeding outweigh the risks and discomforts of surgery.

The size, location, and involvement of other abdominal organs determines which type of hysterectomy is most appropriate.

Removal of the ovaries (oophorectomy) may be required, for example, when ovarian hormones are making other conditions worse, such as endometriosis or ovarian cysts. When the ovaries are removed, estrogen replacement therapy (ERT) is usually prescribed to take the place of the hormone cycle and protect against osteoporosis risk, at least until menopausal age.

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Info Quiz Participants

- Have you selected the correct answer (s) You still have time to put your entry submission together for Info Quiz Prize
- The closing date for entries is 15 May 2013
- We look forward to receiving your winning entry

Info Quiz Answers January-March 2013

1. d	2. e	3. a	4. a	5. e
6. d	7. d	8. d	9. a	10. b

Gastrointestinal endoscopy

With the procedure known as gastrointestinal endoscopy, a physician is able to see the inside lining of digestive tract. This examination is performed using an endoscope—a flexible fiberoptic tube with a tiny TV camera at the end. The camera is connected to either an eyepiece for direct viewing or a video screen that displays the images on a color TV. The endoscope not only allows diagnosis of gastrointestinal



(GI) disease but treatment as well.

- Current endoscopes are derived from a primitive system created in 1806—a tiny tube with a mirror and a wax candle. Although crude, this early instrument allowed a first view into a living body.
- The GI endoscopy procedure may be performed on either an outpatient or inpatient basis. Through the endoscope, a physician can evaluate several problems such as ulcers or muscle spasms. These concerns are not always seen on other imaging tests.
- Endoscopy has several names, depending on which portion of the digestive tract is inspected.
 - Colonoscopy: This procedure enables to see ulcers, inflamed mucous lining of intestine, abnormal growths and bleeding in colon, or large bowel.
 - Enteroscopy: Enteroscopy is a recent diagnostic tool that allows seeing small bowel. The procedure may be used in the following ways:



- ◆ To diagnose and treat hidden GI bleeding
- ◆ To detect the cause for malabsorption
- ◆ To confirm problems of the small bowel seen on an x-ray
- ◆ During surgery, to locate and remove sores with little damage to healthy tissue

Upper gastrointestinal endoscopy

An upper gastrointestinal endoscopy is a procedure that allows to look at the interior lining of esophagus, stomach & 1st part of duodenum.

Preparation

- The physician will explain the test to the patient, including the possibility of biopsy and risks such as the need to remove polyps or other surgical procedures.
- The physician will ask patient to sign a consent form agreeing to the procedure. At the same time, patient must inform the endoscopy team of any medications taking and any allergies or bad reactions that had to previous tests.
- Advise the patient to wear clothing that is easily removed & should come in empty stomach.

During the procedure

- Remove all dentures and eyeglasses prior to beginning an upper endoscopy.
- Placed the patient on his left side and have a plastic mouthpiece placed between teeth to keep his mouth open and make it easier to pass the tube.
- Lubricates the endoscope, passes it through the mouthpiece, then asks patient to swallow it. The physician guides the endoscope under direct visualization through stomach into the small intestine.
- Saliva will be cleared by using a small suction tube that is removed quickly and easily after the test.
- Inspects portions of the linings of esophagus, stomach, and the upper portion of small intestine and then reinspects them when the instrument is withdrawn.
- If necessary, biopsies and removal of foreign bodies and polyps may be performed.
- The procedure usually is completed within 10-15 minutes.

After the procedure

- If the patient has been sedated, he or she will be moved to a recovery area to wake up.
- Once sedation has worn off, before discharging the patient from medical center, give instructions and to contact physician if complications develop.
- At home, it would be best to have a light meal and rest for the remainder of the day.

Reference: *emedicinehealth*

VisualDiagnosis



1. What is the diagnosis?
- Hand-foot-mouth disease
 - Herpes simplex virus infection
 - Herpes zoster virus infection
 - Folliculitis



2. These oral ulcers were painless. What is the most likely diagnosis?
- Chancroid
 - Herpes simplex
 - Squamous cell cancer
 - Syphilis



3. What is the diagnosis?
- Arcus juvenilis
 - Herpetic keratitis
 - Kayser-Fleischer ring
 - Vernal conjunctivitis



4. What is the most likely diagnosis?
- Amyloidosis
 - Neuroblastoma
 - Craniopharyngioma
 - Leukemia



5. What is the diagnosis?
- Graves' disease
 - Hashimoto's thyroiditis
 - Medullary thyroid carcinoma
 - Thyroid lymphoma



6. What is the most likely diagnosis?
- Pilonidal sinus
 - Melanoma
 - Keratoacanthoma
 - Prurigo nodularis

Reference: NEJM

Please see the answers → 1.b 2.d 3.d 4.b 5.a 6.c

Essentials of Evidence Based Clinical Practice

Section-1

How to use the medical literature and this article to improve your patient care



The objective of this article is to help you make efficient use of the published literature to guide your patient care. What does the published literature comprise? Our definition is broad. You may find evidence in a wide variety of sources,

including original journal articles, reviews and synopses of primary studies, practice guidelines, and traditional and innovative medical textbooks.

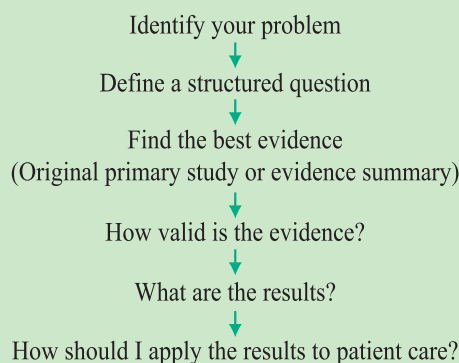
Increasingly, clinicians can most easily access many of these sources through the World Wide Web. In the future, the Internet may be the only route of access for some resources.

The approach of the article's to the medical literature

The structure of this article reflects how we believe you should go about using the literature to provide optimal patients care. The article approach to addressing diagnosis, treatment, harm and prognosis begins when the clinician faces a clinical dilemma. Having identified the problem, the clinician then formulates a structured clinical question and continues with finding the best relevant evidence.

Table 1-1

Approach to addressing diagnosis, treatment, harm, and prognosis



Most sections of this article include an example search for the best evidence. These searches are accurate at the time they were done, but you are unlikely to get exactly the same results if you replicate the searches now. Reasons include additions to the literature and occasion structural changes in databases. Thus, you should view the searches as illustrations of searching principles, rather than as currently definitive searches addressing the clinical question.

Having identified the best evidence, the clinician then proceeds through 3 steps in evaluating that evidence (Table 1-1). The first step asks, are the results of the study valid? This question has to do with the bioavailability of the results. Another way to state this question is: Do these results represent an unbiased estimate of the truth, or have they been influenced in some systematic fashion to lead to a false conclusion?

In the second step (what are the results?), we consider the size and precision of the treatment effect from randomized trials (therapy) (Section 6, Therapy [Randomized Trials]; Section 7, Does Treatment Lower Risk? Understanding the Results; and Section 8, Confidence Intervals), the evidence that helps us to generate pretest probabilities and move to posttest probabilities on the basis of test results (diagnosis) (Section 11, Differential Diagnosis; and Section 12, Diagnostic Tests), the size and precision of our estimate of a harmful effect from observational studies (harm) (Section 9, Harm [Observational Studies]) and our best estimate of a patient's fate (prognosis) (Section 13, Prognosis).

Once we understand the results, we can ask ourselves the third question, how can I apply these results to patients care? This question has 2 parts.

First, can you generalize (or, to put it another way, particularize) the results to your patients? For instance, you should hesitate to institute a treatment if your patient is too dissimilar from those who participated in the trial or trials. Second if the results are generalizable to your patient, what is the significance for your patients? Have the investigators measured all outcomes of importance to patients? The effect of an intervention depends on both benefits and risks of alternative management strategies.

To help demonstrate the clinical relevance of this approach, we begin each core section with a clinical scenario, demonstrate a search for relevant literature, and present a table that summarizes criteria for assessing the validity, results, and applicability of the article of interest. We then address the clinical scenario applying the validity, results, and applicability criteria to an article from the medical literature.

Experience on the wards and outpatient clinic, and with the article's, has taught us that this approach is well suited to the needs of any clinician who is eager to achieve an evidence-based practice.

Section-2

The philosophy of Evidence Based Medicine

Evidence-based medicine (EBM) is about solving clinical problems. In 1992, it was described EBM as a shift in medical paradigms. In contrast to the traditional paradigm of medical practice, EBM places lower value on unsystematic clinical experience and path physiologic rationale, stresses the examination of evidence from clinical research requires a formal set of rules, and places a lower value on authority than the traditional medical paradigm. Although we continue to find this paradigm shift a valid way of conceptualizing EBM, the world is often complex enough to invite more than 1 useful way of thinking about an idea or a phenomenon. In this section, we described another conceptualization that emphasizes how EBM complements and enhances the traditional skills of clinical practice.

Two Fundamental Principles of EBM

As a distinctive approach to patient care, EBM involves 2 fundamental principles. First, EBM posits

a hierarchy of evidence to guide clinical; decision making. Second, evidence alone is never sufficient to make a clinical decision. Decision makers must always trade off the benefits and risks, inconvenience, and costs associated with alternative management strategies and, in doing so, consider their patients value and preferences.

A Hierarchy of Evidence

What is the nature of the evidence in EBM? We suggest a broad definition: any empirical observation constitutes potential evidence, whether systematically collected or not. Thus, the unsystematic observation of the individual clinician constitutes one source of evidence; physiologic experiments constitute another source. Unsystematic observations can lead to profound insights, and wise clinicians develop a healthy respect for the insights of their senior colleagues in issues of clinical observation, diagnosis, and relations with patients and colleagues.

At the same time, our personal clinical observations are often limited by small sample size and by deficiencies in human process of making inferences. Predictions about intervention effects on patient-important outcomes based on physiologic experiments usually are right but occasionally are disastrously wrong. Numerous factors can lead clinicians astray as they try to interpret the results of conventional open trials of therapy. These include natural history, placebo effects, patient and health worker expectations, and the patient's desire to please.

Given the limitations of unsystematic clinical observations and physiologic rationale, EBM suggests a number of hierarchies of evidence, one of which relates to issues of prevention and treatment (Table 2-1).

Issues of diagnosis or prognosis require different hierarchies. For instances, randomization is not relevant to sorting out how well a test is able to distinguish individuals with a target condition or disease from those who are healthy or have a competing condition or disease. For diagnosis, the top of the hierarchy would include studies that enrolled patients about whom clinicians had diagnostic uncertainty and that undertook a blind comparison between the candidate test and a criterion standard.

Table 2-1

Hierarchy of strength of evidence for prevention and treatment decisions

- N-of-1 randomized trial
- Systematic reviews of randomized trial
- Single randomized trial
- Systematic review of observational studies addressing patient-important outcomes
- Single observational studies addressing patient-important outcomes
- Physiologic studies (studies of blood pressure, cardiac output, exercise capacity, bone density, and so forth)
- Unsystematic clinical observations

Clinical research goes beyond unsystematic clinical observation in providing strategies that avoid or attenuate spurious results. The same strategies that minimize bias in conventional therapeutic trials involving multiple patients can guard against misleading results in studies involving single patients. In the n-of-1 randomized controlled trial (n-of-1 RCT), a patient and clinician are blind to whether that patient is receiving active or placebo medication. The patient makes quantitative ratings of troublesome symptoms during each period, and the n-of-1 RCT continues until both the patient and the clinician conclude that the patient is or is not obtaining benefit from the target intervention. N-of-1 RCTs can provide definitive evidence of treatment effectiveness in individual patients and may lead to long-term differences in treatment administration. Unfortunately, n-of-1 RCTs are restricted to chronic conditions with treatments that act and cease acting quickly and are subject to considerable logistic challenges. We must therefore usually rely on studies of other patients to make inferences regarding the patient before us.

The requirement that clinicians generalize from results in other people to their patients inevitably weakens inferences about treatment impact and introduces complex issues of how trial results apply to individual patients. Inferences may nevertheless be strong if results come from a systematic review of methodologically strong RCTs with consistent results. Inferences generally will be somewhat weaker if only a single RCT is being considered,

unless it is large and has enrolled patients much like the patient under consideration (Table 2-1). Because observational studies may underestimate or, more typically, overestimate treatment effects in an unpredictable fashion, their results are far less trustworthy than those of RCTs. Physiologic studies and unsystematic clinical observations provide the weakest inferences about treatment effects.

The hierarchy is not absolute. If treatment effects are sufficiently large and consistent, carefully conducted observational studies may provide more compelling evidence than poorly conducted RCTs. For example, observational studies have allowed extremely strong inferences about the efficacy of penicillin in pneumococcal or that of hip replacement in patients with debilitating hip osteoarthritis. Defining the extent to which clinicians should temper the strength of their inferences when only observational studies are available remains one of the important challenges in EBM.

The hierarchy implies a clear course of action for physicians addressing patient problems. They should look for the highest quality available evidence from the hierarchy. The hierarchy makes it that any claims that there is no evidence for the effect of a particular treatment is a non sequitur. The evidence may be extremely weak- it may be the unsystematic observation of a single clinicians or physiologic studies that point to mechanisms of action that are only indirectly related-but there is always evidence.

Clinical decision making: Evidence is never enough

Picture a woman with chronic pain resulting from terminal cancer. She has come to terms with her condition, resolving her affairs, and said her good-byes, and she wishes to receive only palliative care. She develops severe pneumococcal pneumonia. Evidence that antibiotic therapy reduces morbidity and mortality from pneumococcal pneumonia is strong. Even evidence this convincing does not, however, dictate that this particular patient should receive antibiotics. Her values are such that she would prefer to forgo treatment.

Now picture a second patient, an 85-year-old man with severe dementia who is mute and continent, is

without family or friends and spends his days in apparent discomfort. This man develops pneumococcal pneumonia. Although many clinicians would argue that those responsible for his care should not administer that antibiotic therapy, others would suggest that they should. Again evidence of treatment effectiveness does not automatically imply that treatment should be administered.

Finally, picture a third patient, a healthy 30-year-old mother of 2 children who develops pneumococcal pneumonia. No clinician would doubt the wisdom of administering antibiotic therapy to this patient. This does not mean, however, that an underlying value judgment has been unnecessary. Rather, our values are sufficiently concordant, and the benefits so overwhelm the risk of treatment, that the underlying value judgment is unapparent.

By Values and preferences, we mean the collection of goals, expectations, predispositions, and beliefs that individuals have for certain decisions and their potential outcomes. The explicit enumeration and balancing of benefits and risks that are central of EBM brings the underlying value judgments involved in making management decisions into bold relief.

Acknowledging that values play a role in every important patient care decision highlights our limited understanding of how to ensure that decisions are consistent with individual and, where appropriate, societal values. Health economists have played a major role in developing the science of measuring patient preferences. Some decision aids incorporate patient values indirectly. If patients truly understand the potential risks and benefits, their decisions will reflect their preferences. These developments constitute a promising start. Nevertheless, many unanswered questions remain concerning how to elicit preferences and how to incorporate them in clinical encounters already subject to crushing time pressures.

Next, we briefly comment on additional skills that clinicians must master for optimal patient care and the relation of those skills to EBM.

Clinical skills, Humanism and EBM

In summarizing the skills and attributes necessary for evidence based practice, Table 2-2 highlights how EBM complements traditional aspects of clinical expertise. One of us, a secondary-care internist, developed a lesion on his lip shortly before an important presentation. He was concerned and, wondering whether he should take acyclovir, proceeded to spend the next 30 minutes searching for

and evaluating the highest-quality evidence. When he began to discuss his remaining uncertainty with his partner, an experienced dentist, she cut short the discussion by explaining, "But, my dear, that isn't herpes!"

Table 2-2

Knowledge and skills necessary for optimal Evidence-Based Practice

- Diagnostic expertise
- In-depth background knowledge
- Effective searching skills
- Effective critical appraisal skills
- Ability to define and understand benefits and risks of alternatives
- In-depth physiologic understanding allowing application of science to the individual
- Sensitivity and communication skills required for full understanding of patient context
- Ability to elicit and understand patient values and preferences and apply them to management decisions

This story illustrates the necessity of obtaining the correct diagnosis before seeking and applying research evidence regarding optimal treatment. After making the diagnosis, the clinician relies on experience and background knowledge to define the relevant management options. Having identified those options, the clinicians can search for, evaluate, and apply the best evidence regarding treatment.

In applying evidence, clinicians rely on their expertise to define features that affect the applicability of the results to the individual patient. The clinician must judge the extent to which differences in treatment (for instance, local surgical expertise or the possibility of patient nonadherence), the availability of monitoring, or patient characteristics (such as age, comorbidity, or the patient's personal circumstances) may affect estimates of benefit and risk that come from the published literature.

Understanding the patient's personal circumstances is of particular importance and requires compassion, sensitive listening skills, and broad perspectives from the humanities and social science. For some patients, incorporation of patient values for major decisions will mean a full enumeration of the possible benefits, risk, and inconvenience associated with alternative management strategies that are relevant to the particular patient.

For some patients and problems, this discussion should involve the patient's family. For other problems—the discussion of screening with prostate-specific antigen with older male patients, for instance—attempts to involve other family members might violate strong cultural norms.

Some patients are uncomfortable with an explicit discussion of benefits and risk and objective to clinicians placing what they perceive as excessive responsibility for decision making on their shoulders. In such cases, it is the physician's responsibility to develop insight to ensure that choices will be consistent with the patient's values and preferences. Understanding and implementing the sort of decision making process that patient's desire and effectively communicating the information they need require skills in understanding the patient's narrative and the person behind that narrative.

Additional challenges for EBM

Clinicians will find that time limitations present the biggest challenge to evidence-based practice. Fortunately, new resources to assist clinicians are

A second enormous challenge for evidence-based practice is ensuring that management strategies are consistent with the patient's values and preferences. In a time-constrained environment, how can we ensure that patient's involvement in decision making has the form and extent that they desire and that the outcome reflects their needs and desires? Progress in addressing this daunting question will require a major expenditure of time and intellectual energy from clinician researchers.

This article deals primarily with decision making at the level of the individual patient. Evident based approaches can also inform health policy making, day to day decisions in public health, and a systems level decisions such as those facing hospital managers. In each of these areas, EBM can support the appropriate goal of gaining health benefit from limited sources.

In the policy arena, dealing with differing values poses even more challenges than in the arena of individual patient care. Should we restrict ourselves to alternative resource allocation within a fixed pool of health care resources, or should we trading off health care services against, for instance,

Table 2-3

A Hierarchy of preprocessed evidence	
Studies	Preprocessing involves selecting only those studies that are both highly relevant and characterized by study designs that minimize bias and thus permit a high strength of inference
Systematic reviews	Reviews involving the identification, selection, appraisal, and summary of primary studies addressing a focused clinical question using methods to reduce the likelihood of bias
Synopses	Brief summaries that encapsulate the key methodologic details and results of a single study or systematic review
Systems	Practice guidelines, clinical pathways, or evidence-based textbook summaries that integrate evidence-based information about specific clinical problems and provide regular updates to guide the care of individual patients

available and the pace of innovation is rapid. One can consider a classification of information sources that comes with a mnemonic device, 4S: the individual study, the systematic review of all the available studies on a given problem, a synopsis of both individual studies and summaries, and systems of information. By systems, we mean summaries that link a number of synopses related to the care of a particular patient (acute upper gastrointestinal bleeding) or type of patient (the diabetic outpatient) (Table 2-3). Evidence-based selection and summarization is becoming increasing available at each level.

lower tax rates for individual or corporations? How should we deal with the large body of observational studies suggesting that social and economic factors may have a larger influence on the health of populations than health care delivery? How should we deal with the tension between what may be best for a person and what may be optimal for the society of which that person is a member? The debate about such issue is at the heart of evidence - based health policy making, but, inevitably, it has implications for decision making at the individual patient level.

Reference: JAMA evidence, 2nd edition, pp: 1-15

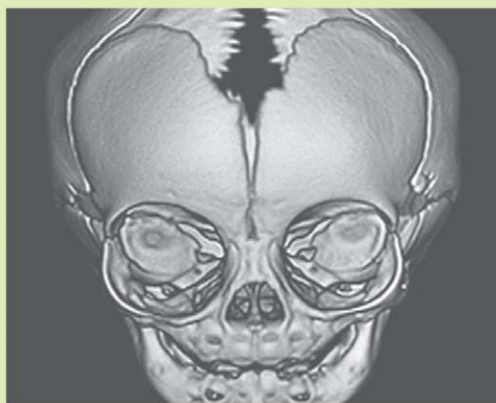
In the next issue of Info Medicus we will publish the subsequent sections of Essentials of Evidence Based Clinical Practice.

Stickler syndrome associated with congenital glaucoma

A 1 month old baby girl was referred for management of congenital corneal opacity. She was born of a non-consanguineous marriage with no significant family history. She had a history of feeding difficulties and was diagnosed to have cleft palate at birth. She was examined under anesthesia with a laryngeal mask airway and was found to have raised intraocular pressure (IOP). She was scheduled for glaucoma filtering surgery, which was deferred because of



unsuccessful endotracheal intubation. Physical examination showed brachycephaly, pseudo proptosis, a flat nasal bridge, anteverted nostrils, micrognathia, cleft palate, glossoptosis, and auditory impairment. Examination under anesthesia showed diffuse corneal stromal oedema with central Haab's striae, horizontal corneal diameter of 14 mm in both eyes, and IOP of 30 and 28 mm Hg in the right and left eye, respectively. Gonioscopy showed anterior high insertion of the iris. Posterior segment examination was unremarkable. Refraction was -14 dioptre sphere with 27.5 mm axial length on



ultra sound B-scan in both eyes. Orthopaedic assessment showed mild spondyloepiphyseal dysplasia. Genetic assessment showed normal chromosomal pattern.

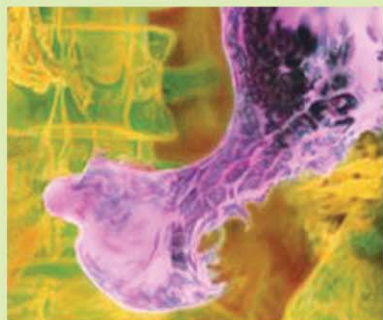
A diagnosis of Stickler syndrome with Pierre Robin sequence and bilateral congenital glaucoma was made. She

had simultaneous bilateral combined trabeculotomy with trabeculectomy under general anesthesia with laryngeal mask airway as endotracheal intubation failed because of micrognathia and cleft palate. In last follow-up, her visual acuity was 20/130 with Teller's acuity cards. She requires long term monitoring of her vision and 6 monthly checks for

retinal detachment, raised IOP; and annual orthopaedic and otorhinological consultation. She will also require cleft-palate repair by 18-24 months of age.

Stickler syndrome is a dominantly inherited type of progressive hereditary ophthlmoarthropathy due to mutations in the COL2A1, COL11A1, or COL11A2 gene. It is a disorder of collagen connective tissues with characteristic ocular signs (moderate to severe myopia, lenticular opacities, vitreoretinal degeneration, peri vascular pigmentary retinopathy, and retinal detachment); skeletal signs (joint hyperextensibility and enlargement, arthritis, and mild spondyloepiphyseal dysplasia) and orofacial abnormalities (midfacial flattening, cleft palate, sensori-neural hearing loss, and Pierre Robin sequence). Pierre Robin sequence is currently regarded as a nonspecific manifestation of different syndromes, with half such cases being associated with Stickler syndrome. Open angle glaucoma in adults with Stickler syndrome is well described, and the reported incidence of anterior chamber angle anomalies associated with the syndrome is 26%. Despite the high incidence of anterior chamber angle abnormalities, congenital glaucoma in association with Stickler syndrome is rarely reported. However, a high number of cases of Pierre Robin sequence associated with congenital glaucoma have been reported, and most of these reports were published before Stickler syndrome was well recognized. It is possible that few of these cases were in fact cases of Stickler syndrome associated with congenital glaucoma, which may also be a reason for the association not being well recognized. Congenital glaucoma can coexist with Stickler syndrome and poses a challenge in terms of management because of large eyeball and thin sclera with various associated co-morbidities and difficult intubation. Early recognition of the syndrome is important, not only for genetic counseling but also to offer a more precise prognosis and improved treatment of serious disorders such as congenital glaucoma. A multidisciplinary approach is needed for successful management of these children.

Reference: Lancet, February, 2013

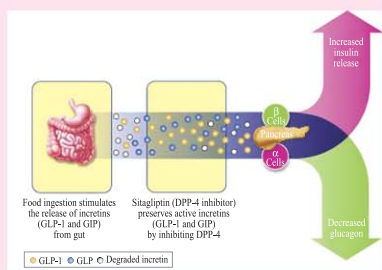


Stomach cancer 'spotted by breath test'

A quick and simple breath test can diagnose stomach cancer. Scientists from Israel and China found the test was 90% accurate at detecting and distinguishing cancers from other stomach complaints. The British Journal of Cancer says the test could revolutionise and speed up the way this cancer is diagnosed. Currently doctors diagnose stomach cancer

by taking a biopsy of the stomach lining using a probe and a flexible camera passed via mouth and down the gullet. The new test looks for chemical profiles in exhaled breath that are unique to patients with stomach cancer. Cancer appears to give off a signature smell of volatile organic compounds that can be detected using the right technical medical kit. The science behind the test itself is not new - many researchers have been working on the possibility of breath tests for a number of cancers, including lung.

Reference: bbc.co.uk



Incretin-Based Antidiabetic agents

The incretin hormones include GLP-1 and gastric inhibitory peptide (GIP). GLP-1 is secreted by ileal L cells and is dependent on the presence of nutrients in the lumen of the small intestine. Once in the circulation, GLP-1 has been rapidly degraded by the enzyme DPP-4.

The incretin effect is severely reduced or absent in T2DM. Sitagliptin that is incretin-based new antidiabetic consists of both Dipeptidyl Peptidase-4 (DPP-4) inhibitors and Glucagon like Peptide-1 (GLP-1) analogs are now being used globally. They are almost

equally effective as conventional antidiabetics like Sulphonylureas (SU), Metformin (MET), Thiazolidinediones (TZD) and insulin when given as monotherapy or combined with SU, MET or TZD as second line agent. Incretin-based agents do not cause hypoglycaemia, so useful for elderly diabetics and in the month of Ramadan. It produces weight loss in spite of weight gain and do not retain salt or water and almost no gastrointestinal (GIT) symptoms. The agents correct vascular dysfunctions and dyslipidaemia and can be given in elderly and renal impaired patients.

Reference: *Faridpur Med. Coll.J.2011;6(1):51-54*



Tableware can be dangerous

Melamine, a chemical that sickened and killed babies when it tainted baby formula can also leach off tableware and into food, according to a Taiwan study. The researchers in JAMA Internal Medicine, warned that their findings don't prove that melamine is harmful to

people in the amounts detected when study participants ate hot soup from melamine bowls. Large doses of melamine, which is used in some types of fertilizer and in resin used to make tableware, killed six babies in China and sent thousands more to the hospital with kidney damage in 2008. In high enough quantities, melamine can cause kidney stones and other kidney problems in adults. The researcher of Medical University in Taiwan found that melamine tableware may release large amounts of melamine when used to

serve high-temperature foods. For the study, six people in their 20s ate hot soup for breakfast out of melamine bowls, while another six ate soup from ceramic bowls. Then, the researchers monitored participants' urine for the next twelve hours. Three weeks later, the two groups were reversed. For the rest of the day, the total melamine excreted in study volunteers' urine was 8.35 micrograms following a melamine bowl breakfast, compared to 1.31 micrograms after breakfast from a ceramic bowl. The study didn't measure any health effects possibly related to melamine, and it's not clear if those urine levels would lead to any long-term medical problems or if participants' bodies were storing any of the chemical. Anyone who has a choice might as well avoid buying tableware made with melamine, because it does interact with some acidic foods and in the microwave.

Reference: bbc.co.uk

Jog your memory

Please select the correct answer by (✓) against a, b, c, d of each questions in the Business Reply Card and send it through our colleagues or mail within 15 May 2013; this will ensure eligibility for the Raffle Draw and the lucky winners will get attractive prizes!

- 1. A patient has been taking anti-tuberculous therapy for MDR-TB. His drugs regimen contains 6 drugs. The patient eventually develops difficulty in distinguishing red & green colours. Which of the following drugs is responsible for this effect?**
 - a. Amiodrone
 - b. Pyrazinamide
 - c. Rifampicin
 - d. Ethambutol
- 2. A patient with acute blood loss, the mechanism triggered immediately would be**
 - a. Baroreceptor Reflex
 - b. Renin-angiotensin System
 - c. Chemoreceptor
 - d. CNS ischemic response
- 3. Serum Gastrin levels are increased by prolonged use of**
 - a. H2 Receptor blockers
 - b. Proton Pump Inhibitors
 - c. Antacids
 - d. Anticholinergics
- 4. ECG of a patient shows progressively increasing PR intervals followed by dropped beat. What is the condition?**
 - a. Third degree heart block
 - b. Mobitz Type 1
 - c. Sinus arrhythmia
 - d. Mobitz Type 2
- 5. Which of the followings is not caused by parasympathetic stimulation?**
 - a. Micturation
 - b. Miosis
 - c. Increased GIT motility
 - d. Sweating
- 6. Alpha-1 receptor stimulation causes:**
 - a. Pupillary dilatation
 - b. Increased heart rate
 - c. Increased contractility
 - d. Increased gastric motility
- 7. Corneal opacities are caused by:**
 - a. Ethambutol
 - b. Phenothiazines
 - c. Chloroquine
 - d. Penicillamine
- 8. Patient after an ischemic attack has ventricular Tachycardia. Drug of choice is**
 - a. Amiodrone
 - b. Metoprolol
 - c. Lidocaine
 - d. Verapamil
- 9. Patient has hemoptysis & glomerulonephritis. The most probable diagnosis is**
 - a. Wegner's Granulomatosis
 - b. Good Pasture Syndrome
 - c. Diabetic glomerulopathy
 - d. SLE nephritis
- 10. Damage to middle meningeal artery causes hematoma formation between**
 - a. Dura mater & arachnoid mater
 - b. Arachnoid mater & pia mater
 - c. Dura mater & clavaria
 - d. Pia mater & cortex



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