



Family Medicine
Team 438

PREMARITAL COUNSELING AND TESTS

Editing file

Lecture Objectives:

- Recognize the Saudi Healthy Marriage program.
- Recall the program's areas of pre-marital counseling.
- List diseases included in the Saudi pre-marital screening program.
- Identify the fate of tested individuals (case, carrier, clear).
- Recognize cultural considerations for pre-marital counseling in Saudi Arabia.

- ❑ Important
- ❑ Original content
- ❑ Only in girls slides
- ❑ Only in boys slides
- ❑ Doctor's notes

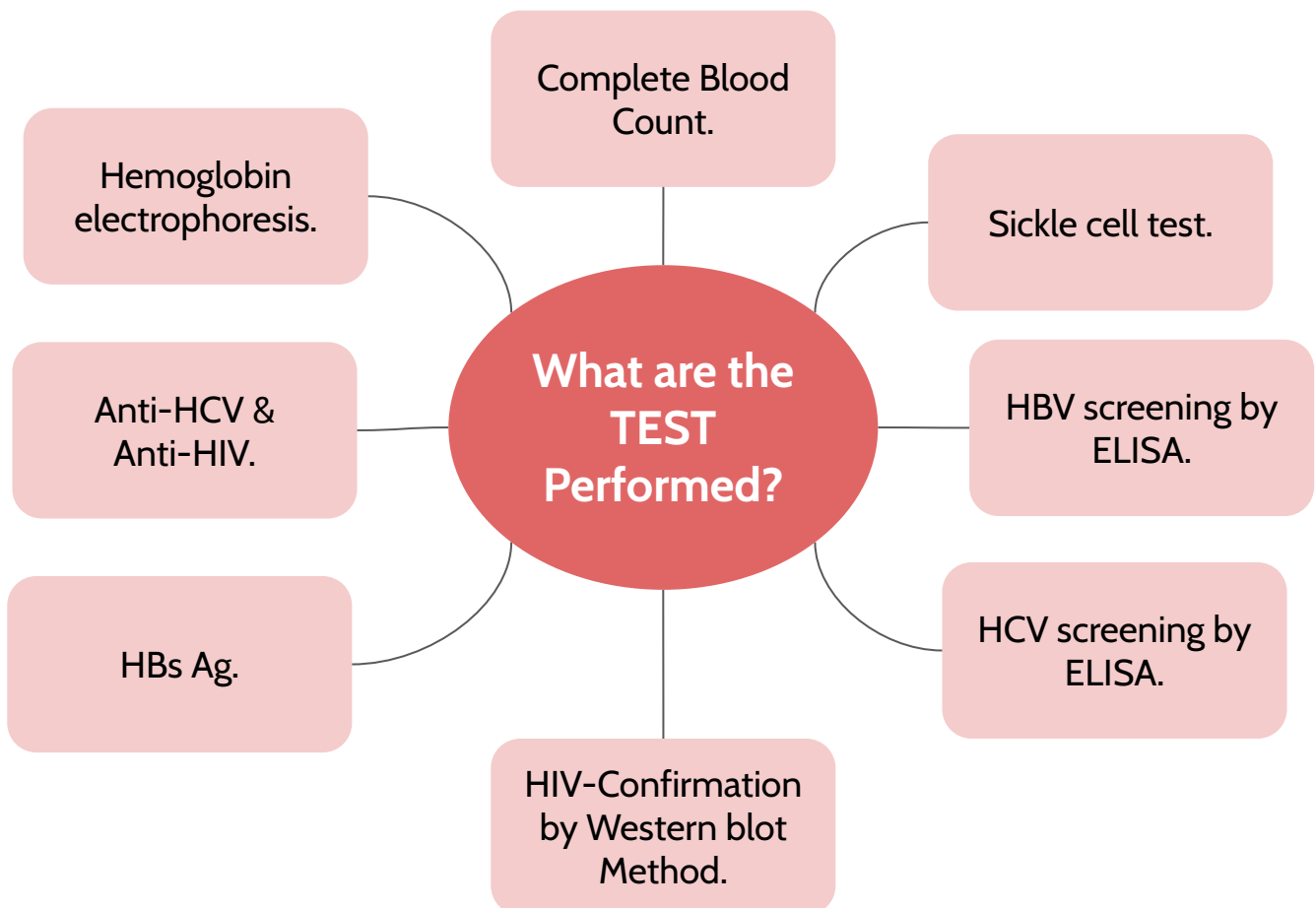


PREMARITAL¹ COUNSELING²

Premarital counseling is a type of advice that helps couples prepare for marriage. Premarital counseling can help ensure that both spouses would have a strong, healthy relationship — giving them a better chance for a stable and satisfying marriage.

PREMARITAL SCREENING PROGRAM

- Genetic disorders particularly Hemoglobinopathies like Thalassemia , Sickle cell anaemia are fairly common in Saudi Arabia , particularly in eastern and southern region.
- A high prevalence of Carrier status was reported predominantly in the eastern and south western regions of Saudi Arabia.
- In 2004 the Saudi Ministry of Health implemented a mandatory premarital screening program to decrease the incidence of these genetic disorders in future generations.
- In 2008 this test was updated to include mandatory screening for HBV , HCV and HIV.
- This new program was named “ **program of healthy marriage**”.



1: Premarital: before marriage.

2: Counseling: “professional guidance of the individual by utilizing psychological methods”.

PREREQUISITE OF SCREENING PROGRAM

Any successful screening program must comply with:

- Prevailing culture.
- Ethnic values.
- Economic values.
- Societal values.

● Why to include Hemoglobinopathies in premarital screening program?

- These are autosomal recessive inheritable haemoglobinopathies.
- Common in some regions of Saudi Arabia.
- These are incurable disorders and causes significant morbidity and mortality.
- This imposes a heavy financial burden on the society.

● How screening tests can help?

- A simple blood test can detect carriers of these disorders.
- The future couples could be informed about their chances of producing affected children.

These diseases are now prevalent in epidemic proportion.

They can be easily transmitted to sexual partners and to newborns.

Why to include HIV, HBV and HCV in premarital screening program?

They are not curable.

The mortality and morbidity rates are high.

LABORATORY INTERPRETATION OF HEMOGLOBINOPATHIES

- β -Thalassemia minor (Trait): Symptomless heterozygous carrier state.
- β -Thalassemia Major: Severe symptomatic homozygous Anemia.
- Sickle cell anemia.
- Sickle cell trait.

Types of Normal Hemoglobin

Hb A	Hb A2	Hb F
Comprises 92% of adult hemoglobin.	Comprises 2-3% of adult hemoglobin & Increased In β -Thalassemia.	Comprises less than 1% of hemoglobin in adults. Normal Hemoglobin in Fetus from 3-9th month of life & Increased In β -Thalassemia.

“Genetic Carrier”

A person who carries an allele without exhibiting its effects. Such an allele is usually recessive, but it may also be dominant and latent, with symptoms that do not appear until adulthood.

Who is a carrier of Thalassaemia?

- The β Thalassemia Trait is indicated by the following:
 - Normal or slightly low Hemoglobin.
 - Decreased mean cell volume (MCV).
 - Reduced mean cell hemoglobin (MCH).
 - Hemoglobin A2 Level >3.5% by Hemoglobin electrophoresis.
 - Microcytic hypochromic picture.

HOW WILL YOU INTERPRET AN AUTOSOMAL RECESSIVE DISORDER

The parents are generally unaffected healthy carriers.



This disorder manifests itself only when individual is homozygous for the disease Allele.

The offspring of an affected person will be healthy heterozygotes unless other parent is also a Carrier.

POSSIBLE FUTURE CHILD'S FAITH

- So when **Carrier** marry a **Carrier** ; the offspring could be either of the following:
 - **Homozygous and effected - 25% chance (1 in 4 chance)**.
 - **A Carrier - 50% chance**.
 - **Genetically Normal - 25% chance**.

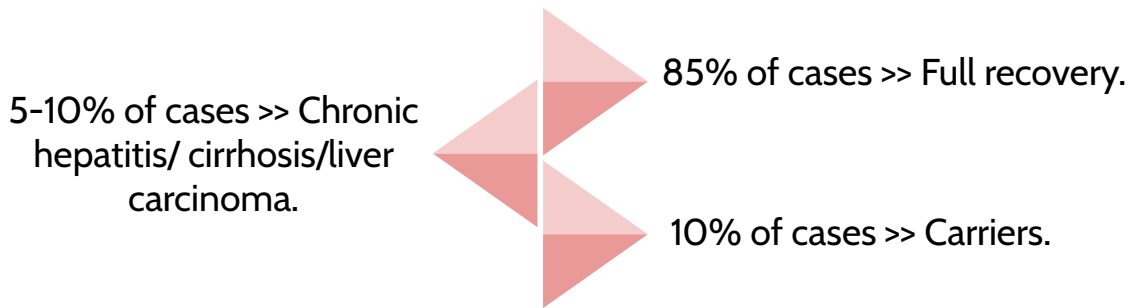
Who is a Viral Carrier?

- One who harbors disease organisms in his body without manifesting any symptoms, thus acting as a distributor of infection.

A Viral Carrier's Fate:

- HIV and Hepatitis B & C viruses can remain dormant for months or even years in **CARRIERS** without showing any symptoms.
- With early diagnosis and treatment **CARRIERS** of HIV or hepatitis viruses can keep the symptoms under control and reduce the risk of serious complications.

HOW WILL YOU INTERPRET AN AUTOSOMAL RECESSIVE DISORDER



SCREENING FOR HBV (ds-DNA)

- **Who is HBV CARRIER?**
 - Following an acute HBV infection , which may be sub-clinical 5-10% of patients will not clear the Virus and will become carrier's of HbsAg.
 - Carriers are usually discovered incidentally on blood Test either Pre marital examination or routine health check-up or blood Donation.
- **Healthy HBsAg Carriers:**
 - HBsAg : Positive.
 - HBeAg : Negative.
 - HBe-antibody: Positive.
 - HBV-DNA: Negative.

SCREENING FOR HCV (ss-RNA)

- It is 70-90 % of cases found in post-transfusion cases.
- Again mostly found incidentally during:
 - Pre marital screening OR routine check-up or Blood donation.
- Not easily spread through sexual –contact.
- **Fate of HCV infection:**
 - **No carrier state found.**
 - Chronic liver disease - 70-80% of cases.
 - Cirrhosis of Liver - 5% of cases.
 - Hepatoma - 15 % of cases.

SCREENING FOR HIV

- HIV is a Retrovirus infecting T-Helper cells bearing the CD4 receptors.
- Transmission is sexual - 60-70% of cases.
- From mother to child - 90% of cases.
- **Fate of HIV-Antibodies:**
 - Confirmed by Western blot Test.
 - Presence of HIV-antibodies gives no indication about disease progression. After exposure to HIV –infected person it may take upto 3 months to become positive.
 - Consider repeating this test if exposure may have occurred < than 3 months prior to testing.

WHAT WILL HAPPEN AFTER THESE TESTS?

“Consult Your Family Physician”.

WHAT STEPS A FAMILY PHYSICIAN SHOULD TAKE?

- **In case of carrier for hemoglobinopathies:**
 - The future couple should be advised that after marriage your children could suffer from Sickle Cell anemia or Thalassemia.
 - The physician will not issue the premarital fitness certificate.
 - The decision will be for the future couple whether to go ahead with the marriage or not.
- **In case of infection with HIV or Hepatitis viruses:**
 - The physician will repeat the test before confirming the diagnosis.
 - If still positive; will not issue premarital fitness certificate.
 - HIV & HCV Positive are encouraged to avoid marriage(for now) – as there is much higher chance to transmit infection to your future spouse.
 - **In HBV Carriers , the healthy partner is advised to be vaccinated.**
 - **The HIV ,HCV patient will be informed and referred to a Specialty Clinic for Follow-up.**

ETHICAL ISSUES

- Usually premarital screening comes too late for couples to change their opinions about marriage.
- By this time they are already committed for this relationship.
- Which spouse would be affected the most? Male or female?
 - Both of them.
- Is it a stigma or dilemma for the female?
 - It may prevent her from getting married.

A TABOO FOR FEMALE

- Rejecting marriage on these ground may affect her Social Life.
- Sometimes this stigma may prevent her from ever getting Married.

STIGMA FOR MALE OR FEMALE

- HIV-testing also has far-reaching social impact especially when someone is planning to marry.
- In some communities certain values may clash with concept of premarital HIV-testing with major issues of confidentiality.
- **What is family physician role?**

Discuss Genetic Counseling

- Encourage individual or family to obtain information about a genetic condition that may affect them, so that they can make appropriate decisions about marriage, reproduction and health management.

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Discuss Consanguinity

- Relationships by blood or common ancestry, in which the chances of offspring inheriting a recessive allele for a disease are increased.
- The closer the relationship, the greater the risk. (especially cousin marriages).

PREVALENCE OF CONSANGUINEOUS MARRIAGE IN MUSLIMS COMMUNITY

- 25-60% of all marriages in Arab regions are consanguineous , with a high incidence of first-cousin marriage.
- In Saudi Arabia , 90% of couples detected as carriers did not follow the advice and went ahead with their marriages.
- There are many teachings in Islamic Culture which promote healthy marriage and role of counseling.
- Marriages between members of same tribe or extended family groups are favored in muslim communities.
- Social and familial commitments make it difficult to ask partners to undergo pre marital testing.
- Wrong religious beliefs could be obstacles to premarital screening success regardless of education level.

A SUCCESSFUL PREMARITAL COUNSELING APPROACH

- Education and attitude of the couples to be screened .
- The meaning of the term “carrier Status” should be made known to the members of the public long before they get married.
- **Educational programs** about the benefits of premarital examination should target unmarried males , so they can make informed choices about unmarried females and consanguineous marriages.
- **Active involvement of policy makers** to establish and implement appropriate screening techniques and policies.
- **“Solution focused”** premarital counseling - Helping couples to develop a shared vision for the marriage.
- Solution- oriented interventions .
- Solution -oriented questions and feedback
- Approach adopted by the counselor . Educate all members of the screening Team (lab technologist;nurse practitioners; physicians;counselors;outreach workers ; social workers.
- There should be good cooperation between community and religious leaders, school parent and health professionals.

AVAILABLE CHOICES AFTER POSITIVE TEST RESULT

- Avoidance of marriage.
- Those who proceed can be offered reproductive options after prenatal diagnosis.

CONCLUSION

Any mandatory screening program does have the potential to succeed as long as the TARGET POPULATION is clearly identified and all ethical issues (confidentiality of results) ,religious , cultural and human rights and concerns about post-diagnostic management are fully addressed.

QUIZ!



- 1) What are the best performed in “Healthy marriage program”?
A. CBC B. Hemoglobin Electrophoresis C. HBsAg D. All

- 2) Successful screening program must comply with:
A. Prevailing Culture B. Economic Values C. Social Values D. All

- 3) When a carrier marry a carrier the offspring could be:
A. Homozygous and affected 50% B. A carrier 25%
C. Genetically Normal 25% D. None.

- 4) Example of Taboo of certain disease is:
A. Measles B. HIV C. Diabetes D. Thalassemia

Answers

1. D, 2. D, 3. C, 4. B

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Thank you!



Give us your feedback!

