

Continuing Medical Education

CME: MCQ – 7.

Pathogenetic mechanisms of acne

Acne remains a socially important disease to the most commonly affected age-group, although prevalence is also significant in other age groups.

Choose the one best answer:

1. Many patients suspect food to play a part in their acne.
 - A. It does
 - B. It does not
 - C. Cigarettes do
 - D. Cigars do

2. Antibiotics used to treat acne may work via several different mecha-

nisms, e.g. lipase production. Resistance may occur.

- A. Resistant bacteria are not transferrable to close contacts
- B. Resistant strains can spread because they are transferrable to close contacts
- C. Resistance does not occur following topical treatment
- D. Resistance occurs only by passive transfer of previously resistant strains

Several of the answers to the following questions may be correct. You are asked to identify the correct pattern of these:

- A. Only statement i. is correct.
- B. Statement i, ii and iv are correct
- C. Statement ii and iii are correct
- D. Statement i and iv are correct

3. Antibiotics used in the treatment of acne may work via several mechanisms, which include:

- i. They reduce the bacterial colonization in the deeper parts of the follicle.
- ii. They have anti-inflammatory effects.
- iii. They do not cause microbial resistance.
- iv. Topical erythromycin down-regulates *P. acnes* metabolism and/or extracellular lipase production.

4. Tetracyclines are the mainstay of acne therapy. Occasionally the question of antibiotic resistance surfaces. Staphylococci acquire resistance via plasmid transfers. How do *P. acnes* acquire resistance?

- i. Mutational change
- ii. Plasmids
- iii. Changes in bacterial membrane
- iv Environmental adaptation

Recommended answers (based on Jappe U: Pathological mechanisms of acne with special emphasis on propionibacterium acnes and related therapy. Acta Derm Venereol 2003; 83:241-248).

1: C: Cigarettes appear to have a dose-response positive correlation with clinical acne. Low-glycemic diets may or may not influence the severity of acne. The studies supporting this notion so far have some methodological difficulties, but not enough to be completely discarded.

2: B: resistant bacteria can be transferred to close contacts.

3: B: Bacterial resistance is developed by antibiotic therapy.

4: A: Resistance emerges slowly through mutations. Development of resistance can be reduced by combining treatments, and avoiding e.g. topical antibiotics as monotherapy.