Name: Corrected Fall Semester (Sophomore Year)

Final Examination - D373 *Principles of Periodontology I*, fall, 2002

Instructions: Select the single best answer for each question and enter response onto the computer bubble sheet, onto which you also enter your name, social security number, and exam version (enter exam version letter). You have 2 hours to complete the examination.

1. Twin studies have revealed which of the following conclusions about the influence of genetic factors on the occurrence of periodontal attachment loss?

B
A. The severe periodontal attachment loss in Papillion-Lefevre syndrome-associated generalized aggressive periodontitis is related to a single gene (Mendelian) inheritance pattern.
B. Approximately one-half of the variation seen in periodontal attachment loss is related to hereditary factors, even after statistically controlling for smoking habits, oral hygiene levels, and access to dental care.
C. 50% of all cases of human periodontitis are etiologically caused by genetic factors.
D. Environmental and behavioral factors, such as smoking, lifestyle and personal habits, are exclusively the cause of periodontal attachment loss in a person, and not than their genetic profile.

2. Mutation of the cathepsin C gene on chromosome 11 is associated with which of the following?

C
A. Increased pro-inflammatory cytokine secretion by macrophages and plasma cells.
B. Severe localized aggressive periodontitis associated with Ehlers-Danlos syndrome.
C. Severe localized aggressive periodontitis associated with Papillon-Lefevre syndrome.
D. Functional polymorphisms in Fc receptor sites on IgG immunoglobulins.

3. Which of the following genes exhibit polymorphisms associated with chronic (adult) periodontitis?
1. vitamin D receptor gene — cluster IL-1 IL-4
2. [redacted]
3. fMLP receptor gene
4. tumor necrosis factor-alpha gene

C
A. all of the above
B. #1, 2 & 4 only
C. [redacted]
D. #1 & 3 only

4. Which of the following represent shortcomings in current genetic testing for IL-1 polymorphisms as a diagnostic indicator of human periodontitis risk?

A
1. Other significant genetic polymorphisms associated with periodontitis are not evaluated.
2. IL-1 polymorphisms may have clinical value in only certain select population groups of northern European origin.
3. Lack of prospective study data demonstrating that predetermination of a positive IL-1 genotype in fact leads to a higher risk of subsequent periodontitis disease development.
4. Lack of conclusive study data showing that IL-1 genotype analysis gives the treating clinician the ability to better modify the course of or prevent periodontitis.

A. all of the above
B. #3 only
C. #1, 2 & 3 only
D. #3 & 4 only

5. Which of the following are associated with complex gene disorders?

1. Consistent clinical disease phenotype (appearance) is found.
2. Adult onset with chronic disease [illegible].
3. Environmental factors as well as genetic factors are significant and important in disease pathology.
4. Gene polymorphisms cause only slight changes in function of gene product (functional polymorphism).

C

A. all of the above
B. #1, 2 & 4 only
C. #2, 3 & 4 only
D. #3 only

6. Which of the following are correct relative to IL-1 genetic polymorphism and periodontitis?

1. More bleeding on probing is found in IL-1 negative genotype subjects.
2. Severe periodontitis is more likely in IL-1 negative genotype subjects of northern European origin.
3. More tooth loss is found in treated periodontitis subjects who are of IL-1 negative genotype.
4. IL-1 is a pro-inflammatory cytokine which promotes bone resorption, stimulates mast cell [illegible] production and releases matrix metalloproteinases, all of which are relevant to periodontal tissue destruction.

D

A. all of the above
B. #1, 2 & 3 only
C. #1 & 4 only
D. #3 only

7. Which of the following is correct concerning circumferential supracrestal fiberotomy (CSF)?

B

A. CSF can be performed only during active tooth movement.
B. CSF is most successful on mandibular canine teeth.
C. CSF reduces post-orthodontic relapse by nearly 75% as compared to non-CSF treated patients.
D. CSF is most successful on mandibular anterior teeth.

8. Orthodontic tooth movement may be used to reduce osseous defects if performed in the presence of good oral hygiene. Orthodontic tooth movement may be used to reduce periodontal attachment loss if performed in the presence of no or minimal gingival tissue inflammation.

B

A. Both statements are true
B. The first statement is true and the second statement is false
C. The first statement is false and the second statement is true
D. Both statements are false

9. [illegible]

A

B. The first statement is true and the second statement is false
C. The first statement is false and the second statement is true
D. Both statements are false