Student PBL I

A. A 61 year old man presented himself for a periodontal checkup with signs of severely ulcerated and inflamed mucosal surfaces of the lips, severe fissuring of the tongue, generalized edema of the gingiva, extensive calculus, and nine new carious lesions of the teeth. The possibility of uncontrolled diabetes mellitus was recognized and supported by laboratory tests: urine had a specific gravity of 1.030 (normal: 1.015-1.025) and contained albumin and glucose. The serum blood glucose level was 12.9 mmole/L. There was no evidence of diabetes in the family. The patient was referred to his family physician for therapy before dental treatment was pursued. He returned to clinic after a few months at which time his blood glucose concentration was said to be 9.7 mmole/L.

1. What methods are used to determine blood glucose levels and what is their specificity?

2. What other biochemical tests would be needed to confirm the diagnosis of diabetes mellitus? Explain.

3. Differentiate between juvenile- and adult-onset diabetes (note the absence of diabetes in the family).

4. Does the requirement for insulin change when the body is under stress, such as during infections? Explain.

5. What might be an appropriate diet for this patient?

6. From the most recently theories of caries formation, what dietary components should be reduced? Salivary amylase activity is generally increased in a diabetic patient.

7. Is the frequency of supragingival calculus higher in a diabetic individual? What might be the possible explanation?

B. Research Material

1. Type I Diabetes Mellitus and Oral Health

Please read this article on my web site under section PBL and be ready to answer questions in the class