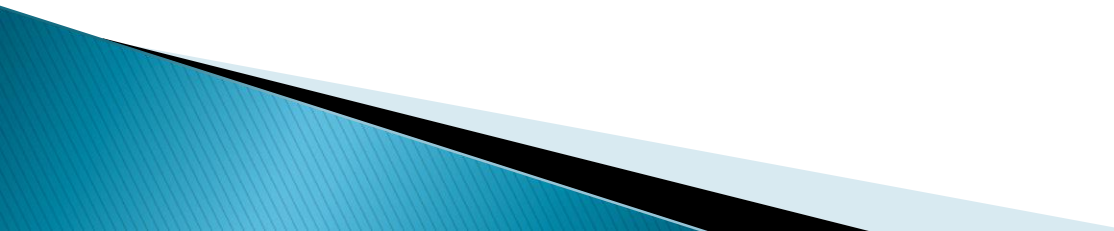


# ادامه مباحث درس سیستمیک ۴


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## SERUM CHEMISTRY

- ▶ Glycosylated Hemoglobin (HbA1c)
  - ▶ Measures the percentage of hemoglobin bound to glucose.
  - ▶ The percent HbA1c reflects how much glucose is bound to the blood during the past 120-day life span of the RBCs.
  - ▶ For nondiabetic patients, normal values are approximately 4.0% to 6.0%.
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# Endocrine Disorders

- ▶ *Diabetes Mellitus*

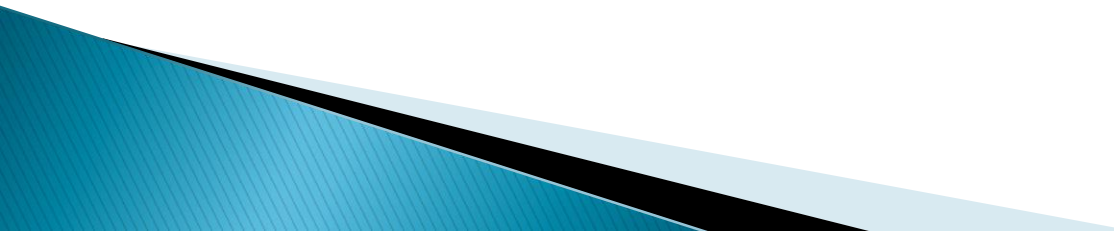
- ▶ The most serious complication is hypoglycemia as a result of excessive insulin level, hypoglycemic drugs, or inadequate food intake.
  - ▶ Signs: Weakness,  
nervousness  
tremor  
palpitations  
sweating
- 

- ▶ A stress reduction protocol is recommended on all patients including early morning appointments, adequate breakfast, pain and anxiety reduction, treatment breaks, possible sedation.

**Table 20-4****HbA1c Values versus Blood Glucose Levels**

HBA1C (%)	AVERAGE BLOOD SUGAR (mg/dL)
6	120
7	150
8	180
9	210
10	240
11	270
12	300

# Cardiovascular Diseases

- ▶ *Hypertension*
  - ▶ Two important steps to decrease the stress in the dental office are a well-monitored stress reduction protocol and proper management of pain and discomfort.
  - ▶ flurazepam [Dalmane] 30 mg or diazepam [Valium] 5 to 10 mg.
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- ▶ A resting systolic pressure greater than 180 or a diastolic pressure greater than 110 should indicate that all elective procedures be delayed until blood pressure may be reduced to a safer level.



## CLASSIFICATION

## TREATMENT

Type 1

Examinations, radiographs, study model impressions, oral hygiene instruction, simple extractions, single-tooth implants, stage 2 uncoverly with minimum tissue reflection, simple restorative dentistry

Type 2

Multiple simple extractions, multiple implants with minimum tissue reflection

Type 3

Difficult extractions, multiple root forms, ridge augmentation, unilateral sinus graft, unilateral subperiosteal implants with quadrant periosteal reflections

Type 4

Full-arch implant (complete subperiosteal implants, ramus frame implants, full-arch endosteal implants), orthognathic surgery, autogenous block bone augmentation, bilateral sinus graft



RISK	SYSTOLIC (mm Hg)	DIASTOLIC (mm Hg)	TYPE 1	TYPE 2	TYPE 3	TYPE 4
Normal	<120	<80	+	+	Sedation	Sedation
Prehypertension	120-139	80-89	+	+	Sedation	Sedation
Hypertension						
Stage I	140-159	90-99	+	Sedation	Sedation	Sedation
Stage II	≥160	≥100	+	Sedation after physician consultation	Postpone all elective procedures	Postpone all elective procedures
	>180	>110	Refer and postpone all elective procedures			

# Dental Implant Management in Patients with Angina Pectoris

RISK		TYPE 1	TYPE 2	TYPE 3	TYPE 4
Mild	≤1/month; ASA II	+	+	Sedation supplemental oxygen	
Moderate	≤1/week; ASA III	+	Sedation, premedication, nitrates, supplemental oxygen	Sedation, premedication, nitrates, supplemental oxygen	Premedication, sedation, outpatient hospitalization
Severe	Daily/more; ASA IV; unstable	+	Physician consultation	Elective procedures contraindicated	Elective procedures contraindicated

# Dental Implant Management in Patients with Myocardial Infarction

RISK	TYPE 1	TYPE 2	TYPE 3	TYPE 4
Mild (>12 mo)	+	+	Physician	Physician Hospitalization if general anesthesia required
Moderate (6-12 mo; ASA III)	+	Postpone all elective procedures	Postpone all elective procedures	Postpone all elective procedures
Severe (<6 mo; ASA IV)	+	Postpone all elective procedures	Postpone all elective procedures	Postpone all elective procedures

- ▶ Subacute Bacterial Endocarditis and Valvular heart Disease



## **Prophylactic Antibiotics No Longer Recommended for Patients with These Conditions**

- Mitral valve prolapse
- Rheumatic heart disease
- Bicuspid valve disease
- Calcified aortic stenosis
- Congenital heart conditions such as ventricular septal defect, atrial septal defect, and hypertrophic cardiomyopathy

## **Prophylactic Antibiotics Indicated for Patients with These Conditions (High Risk)**

- Artificial (prosthetic) heart valves
- History of infectious endocarditis
- Unrepaired or incompletely repaired cyanotic congenital heart disease including shunts and conduits
- Congenital heart defects repaired with prosthetic material or device
- Repaired congenital heart defects with residual defect at the site or adjacent to a prosthetic device
- Cardiac transplantation recipients who develop cardiac valvulopathy

# Antibiotic Regimens for Heart Conditions Requiring Prophylaxis

SITUATION OF PATIENT	AGENT	REGIMEN
Standard general prophylaxis	Amoxicillin	Adults: 2.0 g, 1 hr before procedure
Unable to take oral medications	Ampicillin	Adults: 2.0 g IM or IV
Allergic to penicillin	Clindamycin	Adults: 600 mg, 1 hr before procedure
	Cephalexin* or cefadroxil*	Adults: 2.0 g, 1 hr before procedure
	Azithromycin or clarithromycin	Adults: 500 mg, 1 hr before procedure
Allergic to penicillin and unable to take oral medication	Clindamycin	Adults: 600 mg IV within 30 min before procedure
	Cefazolin*	Adults: 1.0 g IM or IV within 30 min before procedure

# *Thyroid Disorders*

- ▶ Patients with hyperthyroidism are especially sensitive to catecholamines such as epinephrine.
- ▶ When it is coupled with stress and tissue damage, an exacerbation of the symptoms of hyperthyroidism may occur.

*(thyrotoxicosis or thyroid storm )*



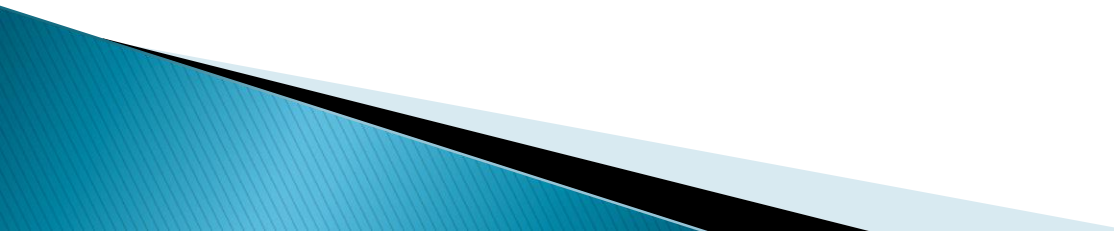


- ▶ Symptoms: fever  
tachycardia  
hypertension  
neurologic and  
gastrointestinal abnormalities
- ▶ If left untreated, may result in CHF and life-threatening arrhythmias.

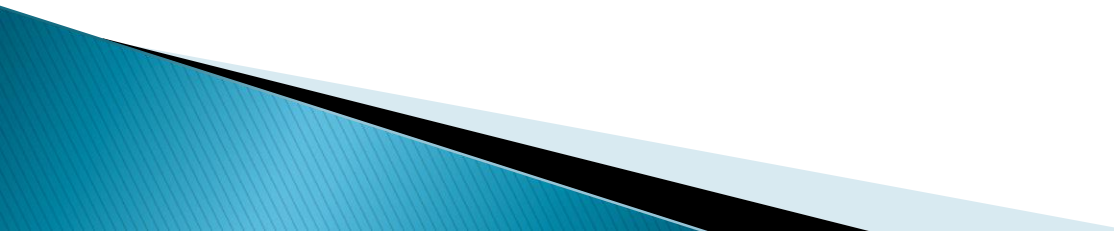
RISK		TYPE 1	TYPE 2	TYPE 3	TYPE 4
Mild	Medical examination <6 months Normal Fct last 6 months	+	+	+	+
Moderate	No symptoms No medical examination No Fct test	+	Decrease epinephrine, steroids, CNS depressants	Physician consultation	Physician consultation
Severe	Symptoms	+	Postpone all elective procedures	Postpone all elective procedures	Postpone all elective procedures

- ▶ medically controlled hypothyroid patients are not at a higher risk of implant failure and are not a contraindication for implant therapy.

# BONE DISEASES

- ▶ **Osteoporosis**
  - ▶ immediate stabilization of dental implants is a common concern because of decreased trabecular bone mass.
  - ▶ Although osteoporosis is a significant factor for bone volume and density, it is not a contraindication for dental implants.
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- ▶ in postmenopausal women older than 50 years had failure rates similar to other patients
- ▶ Implant designs should be greater in width, and surface conditions of implant bodies should be designed to increase bone contact and density.

- ▶ a large percentage of these patients are being treated with bisphosphonates.
  - ▶ The blood level half-life of bisphosphonates is very short, ranging from 30 minutes to 2 hours. after absorption into bone tissue, they can persist for up to 10 years in the skeletal tissues, depending on skeletal turnover time.
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## **Box 20-6**    **Types of Bisphosphonates**

### **Nitrogen Containing**

Oral: alendronate (Fosamax); risendronate (Actonel)

Intravenous: pamidronate (Aredia); zoledronate (Zometa)

### **Non-Nitrogen Containing**

Etidronate (Didronel)

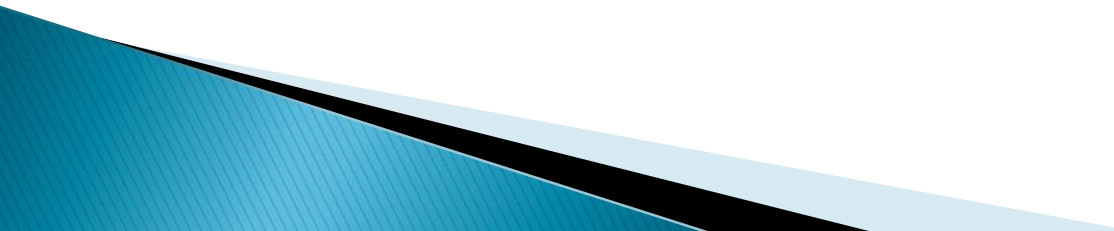
Clodronate (Bonefas)

Tiludronate (Skelid)



- ▶ Symptoms: pain  
soft tissue swelling  
infection  
loosening of teeth  
drainage
- ▶ Radiographically, osteolytic changes are seen and tissue biopsy has shown the presence of actinomyces, which is possibly caused by secondary infection."

- ▶ Laboratory Test for diagnose: *C-terminal telopeptide and collagen type 1 C telopeptide.*
- ▶ invasive dental procedures should be avoided in patients taking *IV bisphosphonate therapy unless* absolutely necessary.

- ▶ The latest studies show that oral bisphosphonate has a very low probability of causing osteonecrosis.
  - ▶ The risks versus benefits of dental treatment must be discussed with the patient in detail.
  - ▶ A well-documented consent form is recommended with possible medical consultation if the patient has been on this medication for more than 3 years.
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- ▶ The use of glucocorticosteroids may be contraindicated in patients taking bisphosphonates, because these drugs have been associated with an increased occurrence of osteonecrosis.