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High risk patients

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Risk assessment

High risk patients

- Many patients with life-threatening diseases now survive as a result of advances in surgical and medical care
- Both the treatment and the disease itself may influence the dental management
- 30% of dental patients have a relevant medical condition

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Risk assessment

Risks related to general health condition

The general health condition of the patient may be of risk:

- **to himself (e.g. prosthetic valve, hemophilia)**
- **to the surroundings including healthcare staff (e.g. infectious diseases)**
- **both (e.g. hemophilic HIV positive patients)**

Risk assessment

No interventional procedures are free from risk but care can be improved by making an adequate assessment based on:

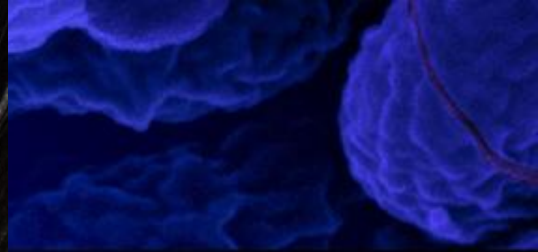
- history, clinical signs, investigation results**
- minimizing trauma and stress**
- and choose the ideal time**

Contraindications relating to general health status

Treatment is contraindicated in case of

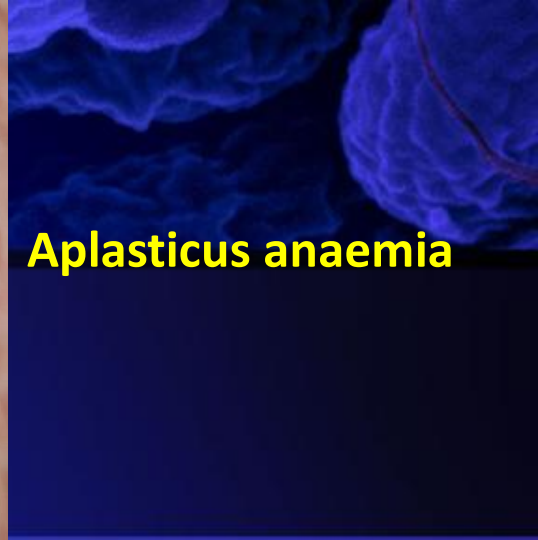
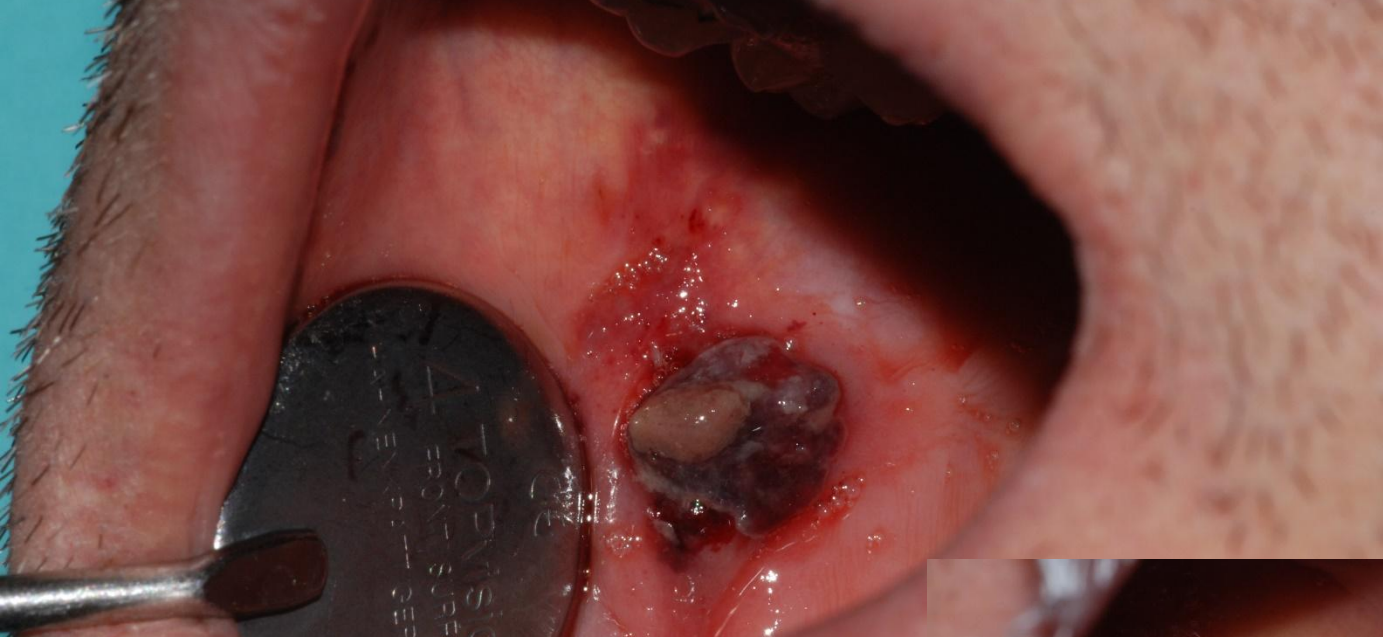
- **Acute infective diseases**
- **Patient in need of hospitalization**
- **Mental disorders in need of sedatives**
- **Anticoagulant therapy with high INR value**
- **Severe allergic reaction to earlier dental treatment with unknown origin**

Must find the solution!



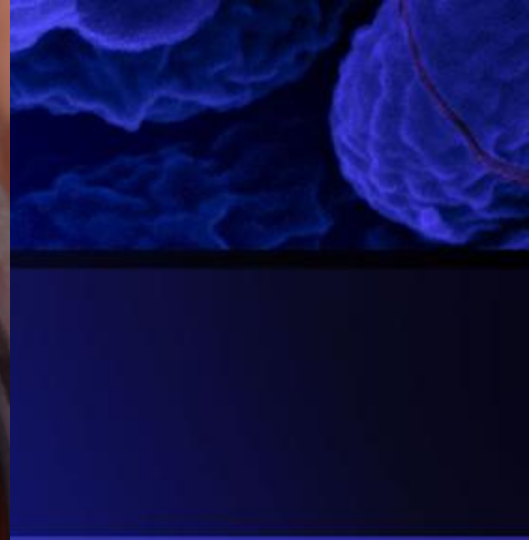
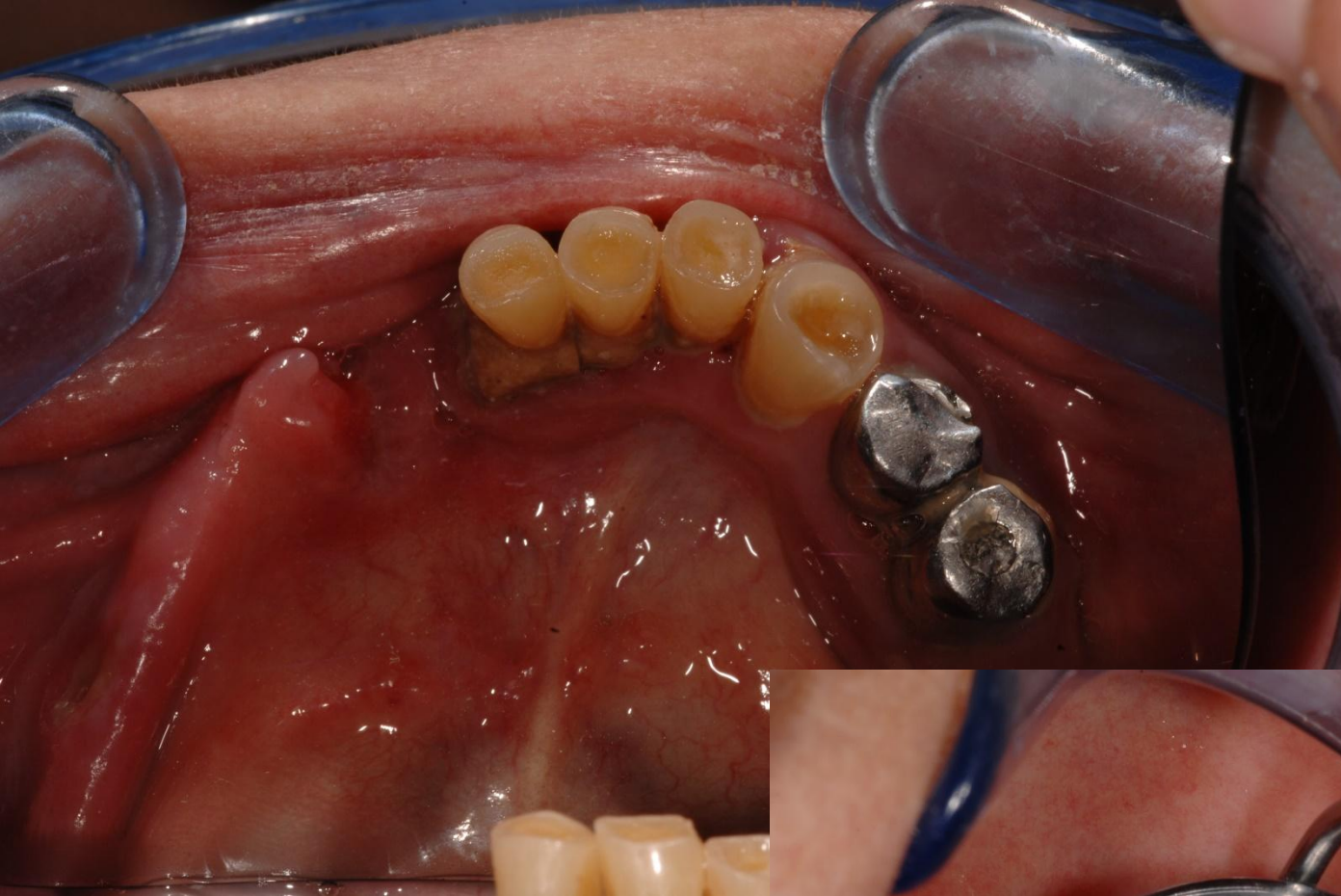
Important diseases related to dental treatment

- **Infectious diseases**
- **Autoimmun diseases**
- **Cardiovascular diseases**
- **Diabetes mellitus**
- **Haematological diseases**
- **Malignant diseases**
- **Rheumatological diseases**
- **Eating disorders**
- **Psychiatrical disorders**
- **Additional risks: abuses, pregnancy**
- **Other risks**



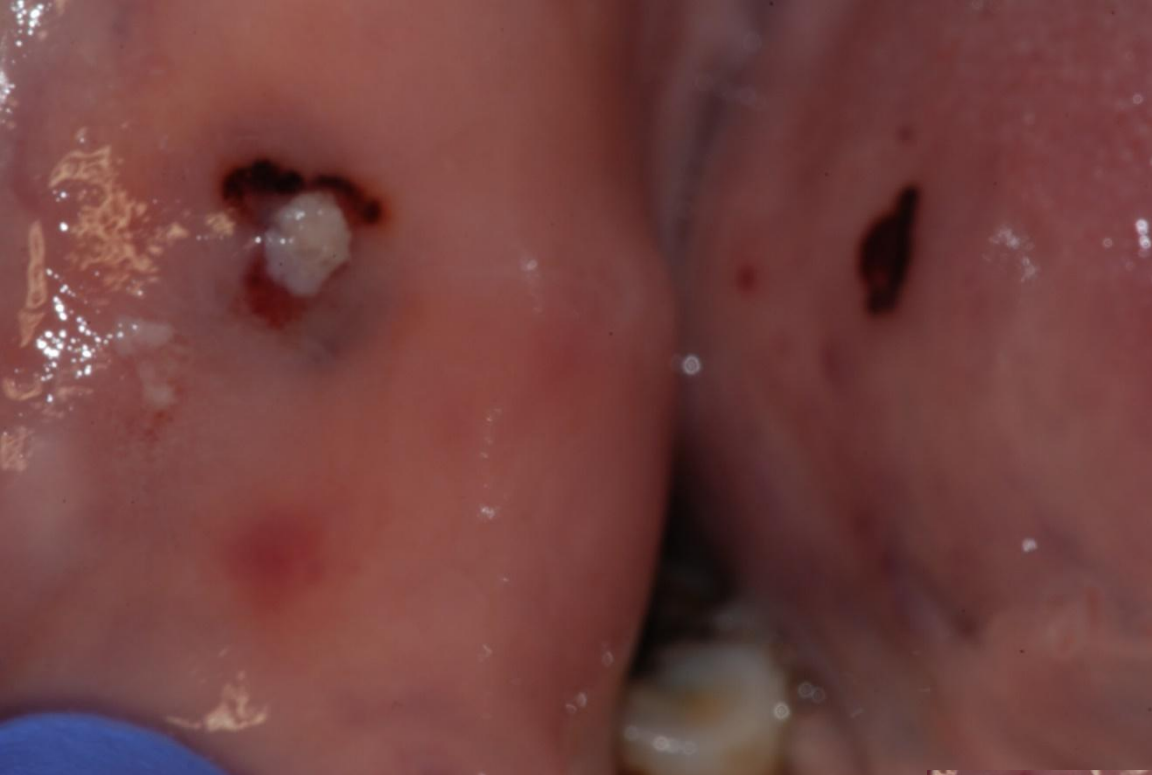
Aplasticus anaemia



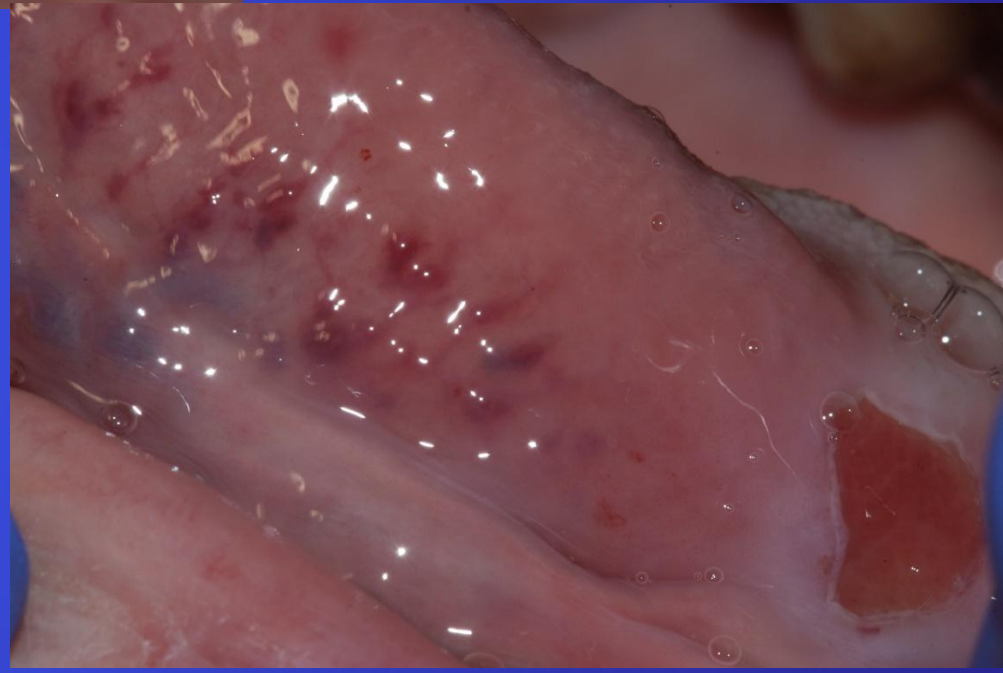


Myeloma multiplex





Myeloid leukaemia





Lymphoid leukaemia



Chronic myeloproliferative diseases, acute leukaemias, malignant lymphomas, other serious haematological diseases

- **Haemophilia**
- **Increased the susceptibility for infections due to primer and secunder damage of the immune system**
- **Ulcers in the oral cavity**



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Transplanted patients

- They often visit the dental office for focus examination
- Increased the susceptibility for infections – immune suppressed status
- Anticoagulant therapy



Asthma + diabetes mellitus

Diabetes mellitus

1. - immun mediated
 2. - idiopathic
- Increased the susceptibility for infections
 - Danger of hypoglycaemia - timing is important!

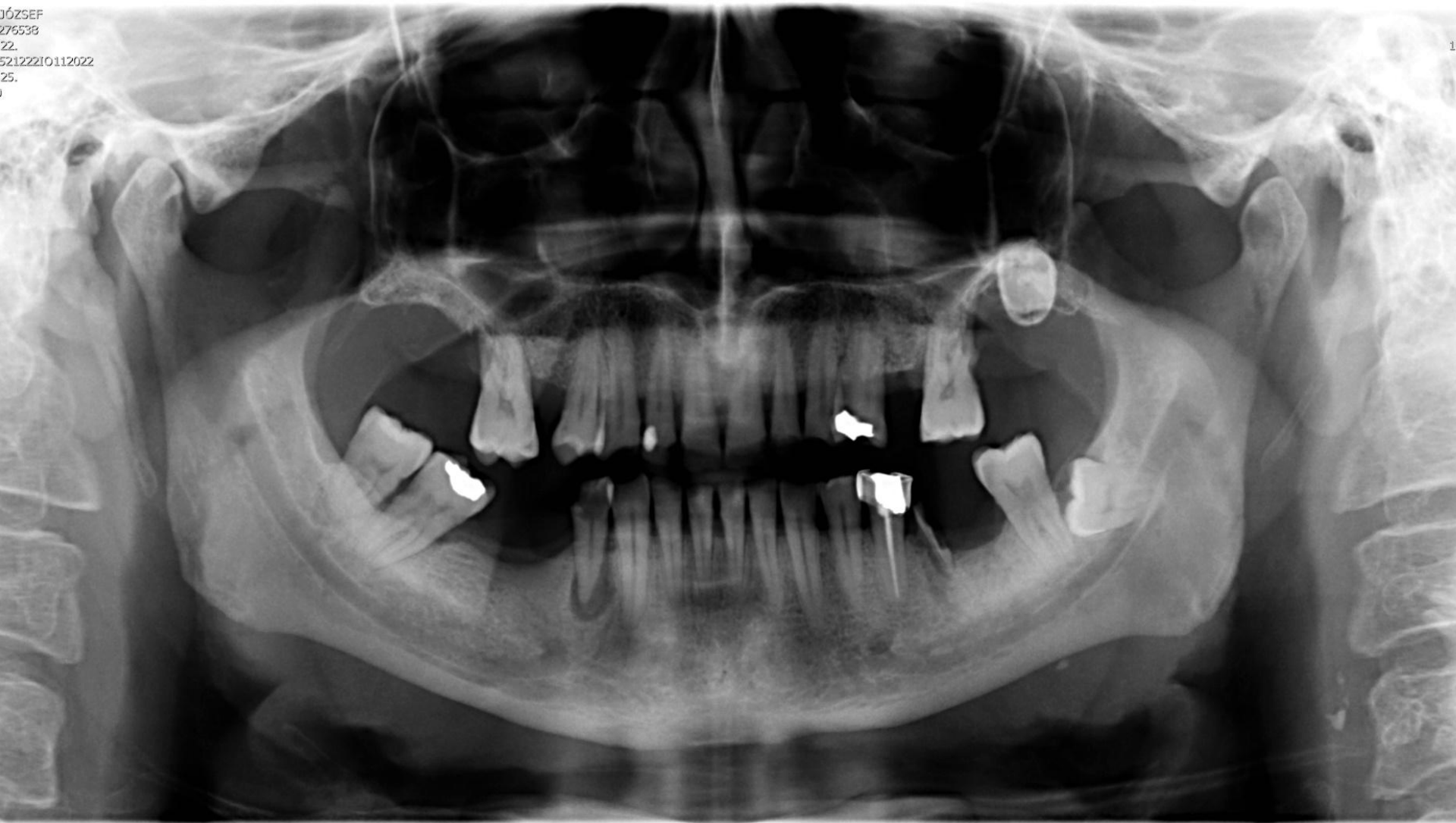
Rheumatoid arthritis

- **Biological therapy, steroids**
- **Signs in the oral cavity**
- **Decreased salivation – secunder Sjögren syndroma**

Patients with immune suppressed status

- Organ transplant patients
- Autoimmune diseases
- Hemathologic malignancies
- Chemotherapy
- Biological and/or steroid therapy
- Radiotherapy

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Infective endocarditis (IE)

- **Cardiac valves damaged by IE – at risk of infection**
- **Life-threatening infection – lethality is 16-60%**
- **Streptococcus mutans and viridans enter the bloodstream from dental plaque**
- **In 15% of the IE cases happened invasive dental treatment within 1 month**

Prophylaxis of IE

Desinfection of the oral cavity

- **Local: rinsing 3 or 4 times per day with clorhexidine or Solumium**
- **Antibiotic prophylaxis with single doses or with a second in the most serious cases**

Standard antibiotic prophylaxis in simple and high risk patients in case of dental and upper respiratory system intervention,

Antibiotikum	1.adagbeavatkozás előtt 1 órával	2. adagbeavatkozás után 6 órával
Amoxicillin	3 g per os	1,5 g per os
gyermekek:	50 mg /kg	25 mg/kg
Penicillinallergia:		
Clindamycin (Dalacin)	300 mg per os	150 mg per os
gyermekek	10 mg/kg	5 mg/kg
vagy Erythromycin	1 g per os	500 mg per os
gyermekek	20 mg /kg	10 mg/kg

Cardiovascular diseases

MI

- **After MI:**
 - **Within 6 months of an MI patients are at highest risk of further MI – no dental treatment**
 - **Between 6 and 12 months – simple dental care
higher risk procedures as surgery leading 5-20% re-infarction**
 - **After than 12 months the patient can have normally elective dental care
(Minimize pain and anxiety)**

Patient should bring all the medication to dental office

Cardiovascular diseases

Cardial failure, MI



- General anaesthesia for dental care in cardiac patients should be avoided
- Patients with stable heart disease receiving treatment under local anaesthesia – effective pain killing is essential
- Dental treatment in sitting position
- An aspirating syringe should be used – avoid adrenalin getting into blood (high pressure arrhythm)
- Suddenly started dyspnoea, sweating, chest pain – stop the dental treatment, patient needs emergency care
- Minimalize the stress and pain
- Hypertension: essential to avoid pain – endogenous adrenaline released in response to pain
- In case of heart attack call emergency

MI, cardiovascular insufficiency, acute cerebrovascular problems, anaphylaxia, hypoglycaemia

- Assistance of breathing
- First AID drugs
- Tools for reanimation



Emergency drills

Most important : Keep it simple !

Designate a specific task to each staff member

1. Assistant : gets kit and assist doctors
2. Receptionist : calls 104 or 112 and makes sure ambulance arrives , clears area

Risks related to drugs

- **Antibiotics**
- **NSAID-s**
- **Anticoagulant drugs**
- **Bisphosphonates**
- **Steroids**
- **Cytostatics**
- **Drug interactions**

Antibiotic usage

Hungary was the only one among nine countries across Europe where a combination of penicillin (amoxicillin-clavulanic acid) was suggested as first line treatment in skin and soft tissue infections in primary care, without any scientific references to it.

The relative proportion of fluoroquinolones was actually the highest in Hungary among European countries in 2015 despite there is general consensus among European countries to limit fluoroquinolone use due to resistance generating effect of fluoroquinolones and their unfavourable side-effect profile.

But:

Antibiotic use in hospital care in Hungary is one of the lowest in Europe

NSAID's

Classic non-steroids

Indometacin, diclofenac, ibuprofen

- **Classic NSAID's inhibit primary COX-1 enzyme**
 - **inhibit platelets**
 - **gastric ulceration and bleeding**
- **They increase the effect of anticoagulant (replace in these cases with paracetamol)**
- **Huge quantity sold (OTC drugs) – one person dies each day through gastric bleeding caused by NSAID's**
- **They increase the incidence of cardiovascular disorders**

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Dental management of patients treated with anticoagulant therapy

Recommendation of the Hungarian Association of Oral and Maxillofacial Surgeons

- **Complications occur more often after the change of medication**

cumarin → small molecule heparin 0.8% (0,2 lethal)

risk of need of hospital care postoperative bleeding in all groups 0,5% (non lethal)

The above recommendation applies to the following dental interventions:

Alveolar correction, implantation, extraction (radix also), radix resection, probing of the parodontal issues, incision of abscesses

Dental management of patients treated with anticoagulant therapy

Not recommended:

1. Interruption of TAG (thrombocytia aggregation inhibitors) treatment
2. Interruption of VKA (K vitamin antagonists) treatment or switching to small molecule heparin if INR (potrombin time, international normalized ratio) is $\leq 3,5$
3. Interruption of NOAC (new oral anticoagulants)







Bisphosphonates

- **Osteoporosis accounts for 1,5 million new fractures**
- **Less than 25% of people who sustain hip fractures regain full function**
- **Bisphosphonates are analogues of inorganic pyrophosphates and inhibit the bone resorption**

Bisphosphonates

- Bisphosphonates are given orally in management of osteoporosis, they are given IV to patients with metastatic breast cancer, metastatic osteolytic bone diseases and primary resorptive malignancies of bone like multiple myeloma, Paget disease (act on osteoclasts)
- Compared with other bones, the jaws have a higher concentration of bisphosphonates – greater risk of necrosis

Bisphosphonates

- **Suspension of the bisphosphonate treatment does not stop the progress**
- **Due to the long half life time, even after the completion of the treatment the risk of BON (bisphosphonate induced osteonecrosis of jaw) is still present**
- **Prevention: Prior to starting the treatment all dental problems must be eliminated, if possible permanent tooth substitutions should be inserted**
- **Warning signs: erythema, ulcer, movable teeth**

Bisphosphonates

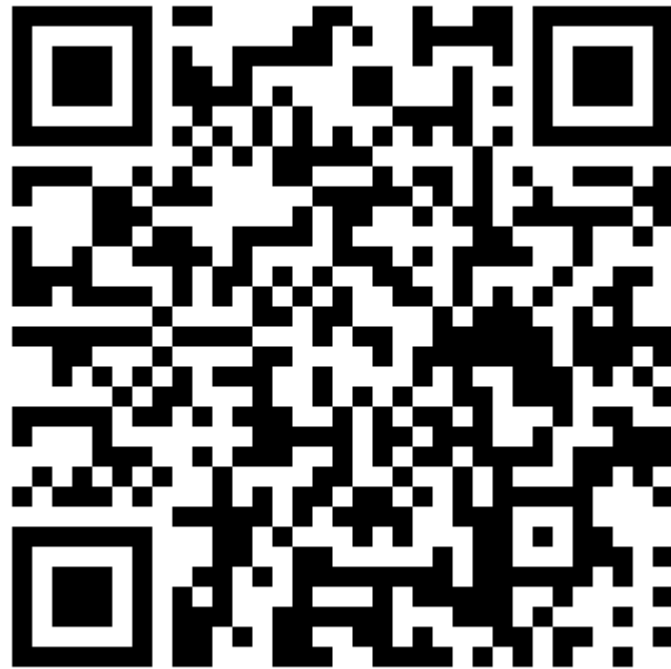
- Patients with bone metastasis taking bisphosphonates suffer jaw necrosis in 2.8% of the occasions (Aredia, Zometa, intravenous use). This happens only in 0.04% of patients taking bisphosphonates orally
- One of the main risk factors of the development of necrosis is existing tooth or periodontal disease, not properly fitting removable denture, dental treatment
- In most cases it is caused by tooth extraction and periodontitis

Drug interactions

- **Drugs used in the dental office have many interactions (NSAID's, azols, antibiotics).**
- **The effect of a certain drug may rise to a dangerous level**
- **A drug becomes ineffective**
- **Not desired, dangerous side effect may occur**

Drugs containing adrenaline are not recommended:

- In case of tachycardia, severe arrhythmia
- MI within 6 months
- Pheochromocytoma
- Glaucoma
- Thyroid overfunction
- Severe high blood pressure
- Pregnancy with complications



<http://report.semmelweis.hu/linkreport.php?qr=FP0H9TF3SYYCBL9W>

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Patients with acute infectious diseases

- Important to differentiate acute (influenza, herpes simplex, etc.) and chronic infections (HIV, HBV, HCV, TBC)
- Acute infection – postpone the treatment if it is possible or choose conservative therapy
Exception: pulpitis, periapical abscess
- Take into consideration applied medicines for the basic disease.

Patients with chronic infectious diseases

Prevention

- The treatment may not be refused in the event of an infectious disease!
- *In most cases interaction with an HIV infected patient's blood or excretion does not lead to infection.*
- Accepting attitude – more information
- In case of an exposure it is vital to find the serological status of the source of the infection.

Risks

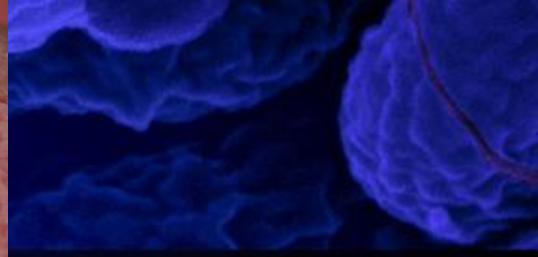
- **Exposure: pierced, cut or bit injuries, direct contact on damaged skin with blood or excretion**
- **The probability of HIV infection in the event of exposure is 0.3%.**
- **In connection to HBV and a vulnerable patient it is 6-30%, to HCV 1.8%**
- **Contact between a small amount of blood and intact skin does not carry risk.**

Treatment of a patient with an infectious disease

- Should be called into the dentist's surgery as the last patient
- Mouth hygiene has increased significance, chlorhexidine mouth rinse
- In the event of invasive treatment antibiotic prophylaxis may be necessary
- Protective equipment should be worn – mask, glasses, gloves, rubber dam isolation
- Avoid the use of the turbine and ultrasonic depurator if possible
- Disinfection must be performed as usual!!!







Patients with psychiatric problems

- Paranoid patients
- Aggressive patients
- Alzheimer disease
- Epilepsy



Bad habits

- **Smoking**
- **Alcohol consumption**
- **Spicy food**
- **Stress**

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Thanks for your attention