

Tumor Lysis Syndrome

Definition

Simultaneous death of many cancer cells produces release to blood of enormous quantities of products of their destruction.

When?

May particularly occur during initial phase of treatment of pts. w/ large chemosensitive tumors

Symptoms

Hyperphosphatemia
Hyperuricemia
Hyperkalemia (life-threatening: cardiac arrhythmias)
Hypocalcemia secondary to formation of calcium phosphate: tetany, mental agitation, seizures
Acute renal failure

Diagnosis

Based on development of
-increased lvl. of serum uric acid (8mg%)
, phosphate (4,5 mg%) , and potassium (6mg%)
-decreased levels of serum calcium (7mg%)
-increased serum creatinine (1,5 x upper normal limit)
-cardiac arrhythmias or death, seizures

Management:

- Forced diuresis 3 L/m² PWE + furosemide
- Allopurinol to fight hyperuricemia (protein degradation).
- Novel agent: rasburicase

Hypercalcemia - Clinical Symptoms

Pts. w/ Ca. conc. b/w 10.5 & 12 mg/dl usually asymptomatic

Renal polyuria
nephrolithiasis (chronic HC)

GI anorexia
nausea
vomiting
constipation
pancreatitis

Neuro-psych weakness
fatigue
confusion
stupor
coma

CV shortened QT
interval on ECG
bradyarrhythmias
heart block
cardiac arrest

Ocular band keratopathy (chronic HC)

Local Radiotherapy

Teleradiotherapy

tumor irradiated from a distant (usually ~ 1m) source

Brachytherapy

irradiation source is placed @ direct vicinity of irradiated tissue (aka. Curietherapy)

Brachytherapy

Contact or intracavitary irradiation

Installation of radiation source into cavity or through a natural route

Interstitial irradiation

Insertion of the radioactive source interstitially

LDR (low-dose-rate)

Currently, most freq. = Cesium 137
--> dose rate: 1 cGy/min
Intracavitary: most freq. cervical ca.
Interstitial: oral cavity ca. , pharyngeal ca. , prostate ca. , sarcoma

HDR (high-dose-rate)

Currently, most freq. = Iridium 192
--> dose rate: 100 cGy/min
Intracavitary: vaginal ca. , oesophageal ca. , lung ca. , sarcoma
Interstitial: prostate ca.

Teleradiotherapy

Conventional

orthovolt (125-500 kV)
-can only be used for palliative tx. of superficially located metastases
--> practically not used these days

Megavolt

telecobaltotherapy, photons & electrons from linear accelerator, neutrons from either neutron generator or cyclotron
--> energy: 4 - 20 MeV



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Renal Ca. - Clinical Presentation

Typical Triad	hematuria abd. pain flank / abd. mass (<i>palpable tumor</i>)
Less freq.	fever weight loss anemia varicocele (abn. enlargement of pampiniform venous plexus)
	PARANEOPLASTIC SYNDROMES: --> erythrocytosis --> hypercalcemia --> nonmetastatic hepatic dysfunc. (Stauffer's synd.) --> acquired dysfibrinogenemia

Pancreatic cancer

Notes

Freq. site = Head of pancreas
No screening test available
5-year survival < 5%
Median age of diag. = 72 y/o
Peak incidence - 65-84 y/o
Males > Females

Clinical Features

Pain
Obstructive Jaundice
Weight loss
Anorexia

Pancreatic cancer (cont)

Risk Factors

- Cigarette Smoking, Obesity, Non-hereditary Chronic Pancreatitis
- Environmental Factors (diet, coffee), prev. partial gastrectomy / cholecystectomy & H. pylori

Physical Findings`

- (+) Courvoisier's sign
- Palpable, nontender gallbladder
- (+) Virchow's Node
- Advanced Disease
- Abdominal Mass, Hepatomegaly, Splenomegaly, Ascitis

Diagnostic Procedures

Ultrasound
CT Scan
ERCP
Endoscopic US
MRCP
FDG-PET*

CA 19-9 (Serum Marker)

- 80-90% sensitivity & specificity
- Suggestive of diag. pancreatic ca.
- Prognostic implications – Very high levels w/ inoperable disease
- Serial evaluation useful for monitoring response to tx.
- Detecting recurrence in pts. w/ completely resected tumors

Treatment

Symptom management
Endoscopic biliary / duodenal stenting
Intestinal bypass surgery
Deoxycytidine analogue Gemcitabine

*Excluding occult distal metastasis

BI-RADS

0 (incomplete)	Recommend add. imaging --> mammogram / targeted US
1 (negative)	Routine breast MR screening if cumulative lifetime risk ≥ 20%
2 (benign)	Routine breast MR screening if cumulative lifetime risk ≥ 20%
3 (prob. benign)	Short-interval (6 mth) follow-up
4 (suspicious)	Tissue diagnosis
5 (highly suggestive of malignancy)	Tissue diagnosis
6 (known biopsy-proven malignancy)	Surgical excision when clinically appropriate

Breast Imaging Reporting and Database System score.

- Scoring syst. used by radiologists describe mammogram results
- Most efficient tool to help detect breast cancer, esp. at its earliest stage

*Table taken from UCSF Department of Radiology & Biomed. Imaging



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