Non-Pharmacological Management of Pain

- Anesthetic interventions
- Neurosurgical interventions
- Cognitive behavioral therapy
- Physical Therapies

Practice

- Pharmacotherapy treats majority of pain(90%).
- Occasionally need anesthetric intervention either as an adjunct or prime reliever of pain(10%).
- Define pain syndrome before block.
- Never deny a patient of alternative pain therapy.

Principles of anesthetic procedures in cancer pain

- Usually reserved for patients who fail extensive pharmacological trials
- Should fail to show any dose response or develop dose limiting side-effects, which are resistant to treatment
- Neurolytic or destructive procedures are usually done in terminal patients due to adverse effects

Reasons for anesthetic procedures

- To reduce pain intensity
- To reduce side-effects of medications
- To save cost
- To facilitate procedures
- To improve quality of life
- Medication unavailability

Anesthetic Procedures

The most useful Procedures:

1.Celiac plexus block

2. Epidural infusions

3. Vertebroplasty

4.Intra-thecal neurolytic blocks

5. Intrathecal pumps

Types of Anesthetic Procedures

- Diagnostic Blocks
- Prognostic Blocks
- Therapeutic

ANESTHETIC PROCEDURES

- **PERIPHERAL NERVE AND PLEXUS BLOCK,** DIAGNOSTIC & THERAPEUTIC
- **SYMPATHETIC BLOCKS**, DIAGNOSTIC & THERAPEUTIC
- **EPIDURAL & INTRATHECAL,** TEMPORARY & PERMANENT

Blocks for head and neck pain

- Mandibular nerve block
- Gasserian ganglion block
- Glossopharyngeal nerve block
- Greater occipital nerve block
- Supraorbital nerve block
- Phrenic nerve block
- Stellate ganglion block

Upper extremity blocks

- Brachial plexus block
- Stellate ganglion block
- Suprascapular nerve block
- Cervico-thoracic epidural block

Blocks for thorax and Upper abdomen

- Intercostal nerve blocks
- paravertebral nerve blocks
- Intrapleural block
- Subarachnoid neurolytic block
- Thoracic epidural block

Blocks for lower abdomen and lower extremities

- Ilioinguinal nerve block
- Iliohypogastric nerve block
- Genitofemoral nerve block
- Obturator nerve block
- Femoral nerve block
- Lateral femoral cutaneous nerve block
- Sciatic nerve block

Blocks for lower extremities

- Epidural block
- Spinal block
- Subarachnoid neurolytic block
- Saddle block
- Lumbar sympathetic block
- Hypogastric plexus block

Sympathetic blocks

- Stellate ganglion block
- Thoracic sympathetic block
- Splanchnic block
- Celiac plexus block
- Hypogastric plexus block
- Lumbar sympathetic block

The Clinical Journal of Pain
3:13-15 © Raven Press, New York

Use of Stellate Ganglion Blocks in the Treatment of Intractable Limb Pain in Lung Cancer

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Department of Anaesthesia, Beth Israel Hospital and the Charles A. Dana Research Center, Boston, Massachusetts, U.S.A.

TYPES OF INTERVENTIONS

1.ANESTHETIC

2. NEUROSURGICAL

Celiac Plexus Block

- Indication; upper abdominal malignancies
- Procedure: alcohol neurolysis most common
- Benefit: Variable
- Risks: local pain, diarrhea, hypotension, neurologic sequelae, and pneumothorax Eisenberg E, Carr DB, Chalmers TC: Anesth Analg 1995; 80:290-295.

Case 5

- A 65 year old female with history of metastatic colon CA , with mets to lung, liver, and right adrenal gland, presents with severe abdominal pain with right back radiation. She is vomiting for the last 5 days, dehydrated. AXR revealed stool in all four quadrants. Patient admitted and was treated for dehydration and constipation. Pain still persisted and patient experiencing sedation and myoclonus form PCA Hydromorphone. The best one time block for this patient is:

A. Intrathecal morphine

B. Lumbar sympathetic block

C. Splanchnic Block

D. Hypogastric plexus block

E. Psoas compartment block

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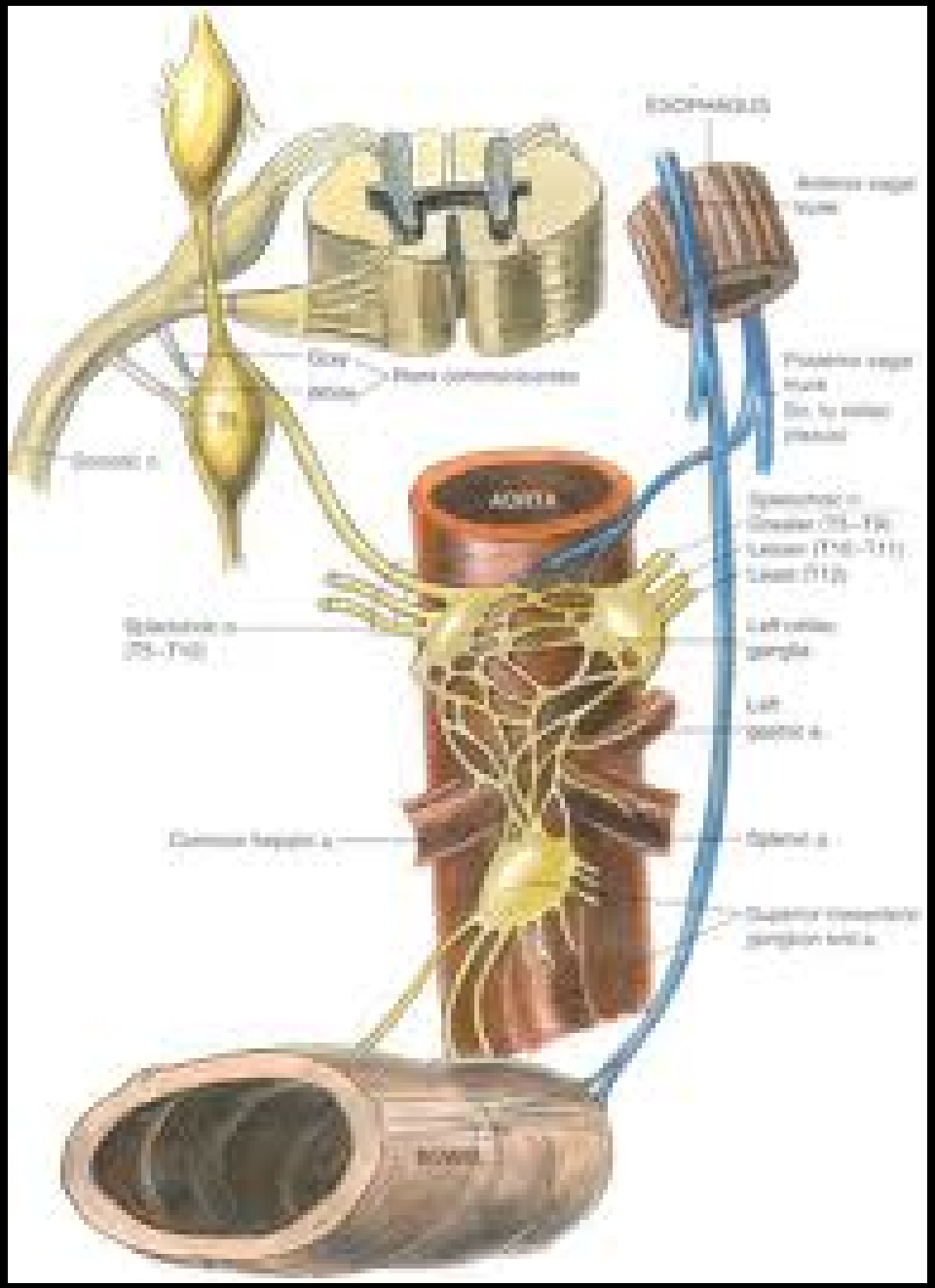
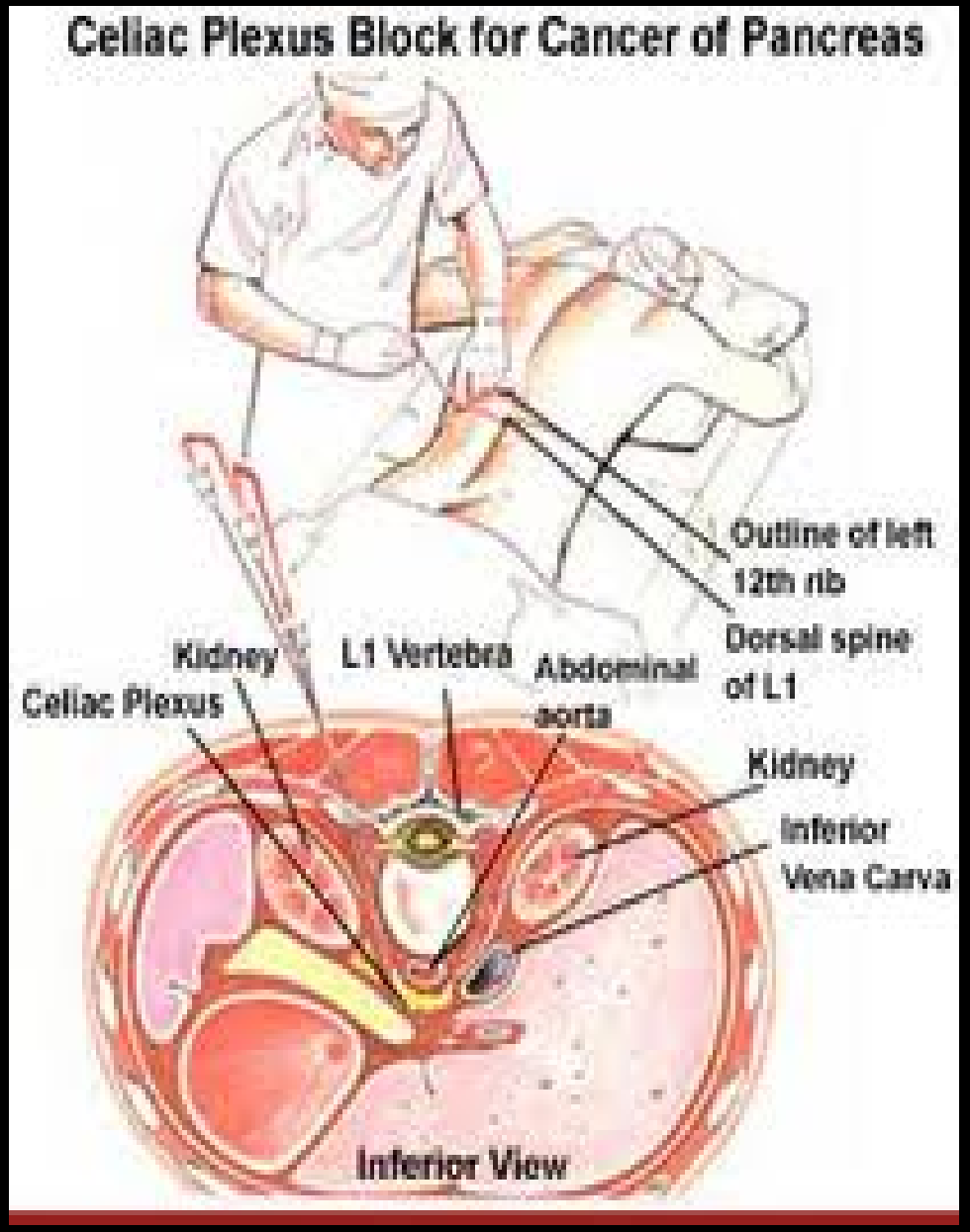
Chemical Splanchnicectomy in Patients with Unresectable Pancreatic Cancer

A Prospective Randomized Trial

Keith D. Lillemoe, M.D., John L. Cameron, M.D., Howard S. Kaufman, M.D., Charles J. Yeo, M.D., Henry A. Pitt, M.D., and Patricia K. Sauter, R.N.

From the Department of Surgery, The Johns Hopkins Medical Institutions, Baltimore, M.D.


ESOPHAGUS
AORTA
BOWEL


Celiac Plexus Block for Cancer of Pancreas
Outline of left 12th rib
Dorsal spine of L1
Kidney
L1 Vertebra
Abdominal aorta
Celiac Plexus
Kidney
Inferior Vena Cava
Inferior View

Anesthesiology
73:326-239, 1990

Superior Hypogastric Plexus Block for Pelvic Cancer Pain

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***Director Anesthesia Pain Services, Deputy Chief, Pain and Symptom Management Section, Assistant Professor of Anesthesiology and Neuro-Oncology

Case 4

- A 46 year old female has ovarian carcinoma with deep pelvic pain in the midline. She is on oxycontin 300 mg po q 8 hrs and 30-60 mg oxycodone q 2 hrs prn. She is severely constipated on an ongoing basis despite aggressive laxative regime. She is also mildly drowsy, helped somewhat by Methylphenidate.

The following is the appropriate block:

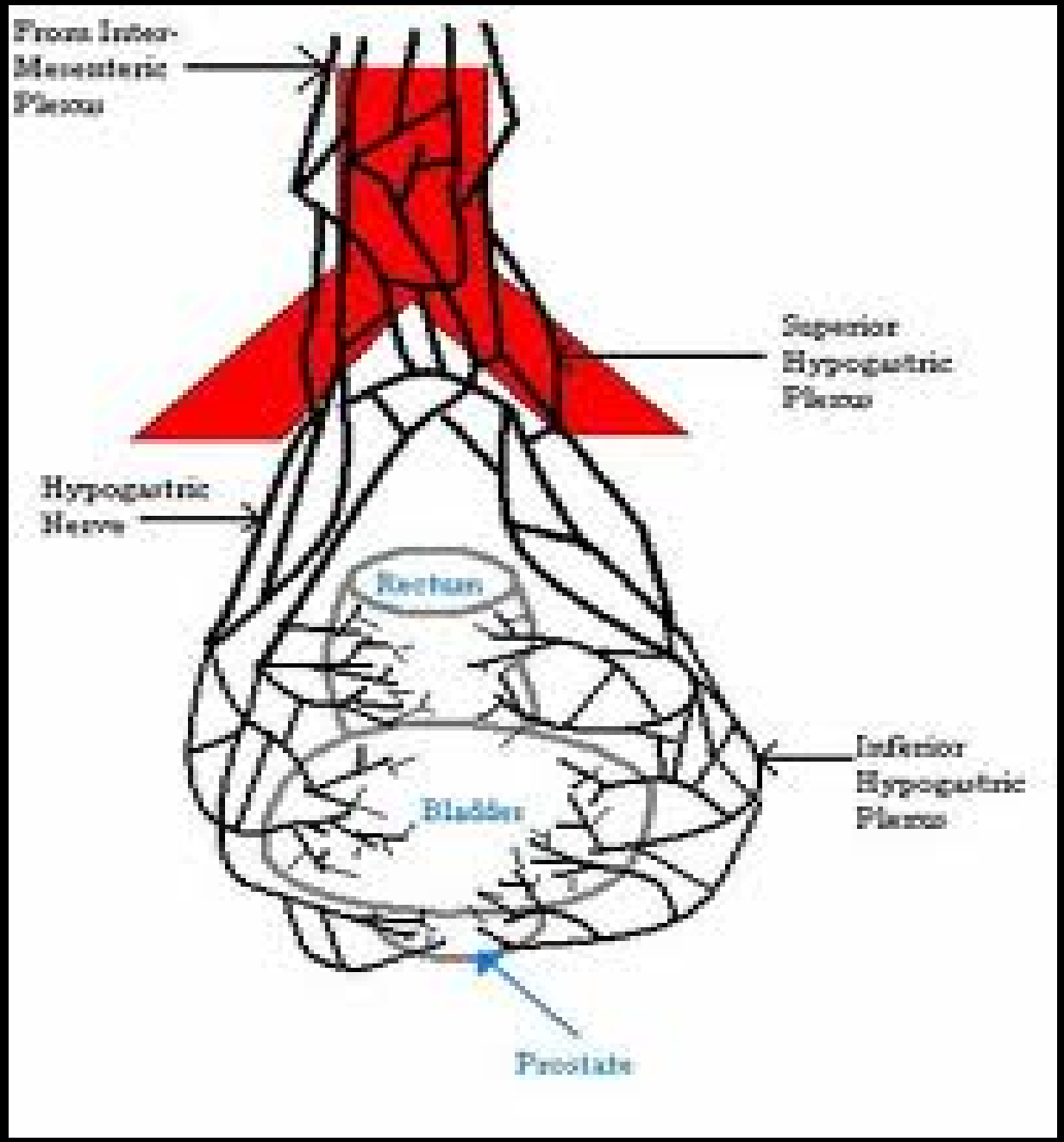
A. Celiac plexus block
B. Hypogastric plexus block
C. Ganglion Impar block
D. Pudendal nerve block
E. Stellate Ganglion Block

Answer 4: B

The superior hypogastric plexus contains sympathetic nerves originating from the descending colon, rectum, testes, penis, prostate, perineum, vulva vagina, uterus, ovaries , urethra and bladder. Therefore, the block can help with pain in any of these regions. The superior hypogastric plexus lies anterior to the vertebral column between the lower third of L5 and the upper third of the S1 vertebral bodies and can be approached posteriorly or anteriorly. Celiac plexus helps pain originating from lower esophagus to mid-transverse colon. Ganglion impar helps pain originating in the rectal area, whereas stellate ganglion block cover regions of face and upper extremity.

Reference:

Â Plancarte R, Amescua C, Patt RB, Aldrete JA. Superior hypogastric plexus block for pelvic cancer pain. Anesthesiology. 1990 Aug;73(2):236-9


From Inter-
Mesenteric
Plexus
Superior
Hypogastric
Plexus
Hypogastric
Nerve
Rectum
Bladder
Inferior
Hypogastric
Plexus
Prostate

Vertebroplasty

- Osteoporosis
- Vertebral Compression Fractures
- Tumors and hemangiomas


Normal vertebral column
(top view)
Cement
Vertebral body
Pedicle
Needle
Compressed vertebrae
Needle injecting cement into compressed vertebra
(side view - cross section)

DRUG INFUSION

- Diffuse mid line bilaterally located in upper or lower parts of body
- Intra thecal
- Epidural
- Intra-ventricular
- (By External or Implanted pump).

Pain, 46 (1991) 271-279

EPIDURAL OPIATES AND LOCAL ANESTHETICS FOR THE MANAGEMENT OF CANCER PAIN

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Pain, 49 (1992) 293-300

Clinical Section

Chronic epidural bupivacaine - opioid infusion in intractable cancer pain

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Efficacy: Cancer Related Pain

Intrathecal

- Paice 96, N = 143 *JPSM*-100%
- Gilmer-Hill 99, N = 9 *Surg Neurol*-95%
- Sallerin-Caute 98, N=159 *Neurosurg*-80%

IT +CMM vs. CMM

2002-Randomized multicenter trial for safety and efficacy of **Intrathecal drug delivery system(IDDS) plus Comprehensive Medical** Management (CMM) Versus CMM.

Smith TJ, Staats P et al. JCO-2002.

IDDS + CMM vs. CMM

- IDDS + CMM arm – Reduced pain, fewer drug toxicities, improved survival vs. CMM.

Entry –unrelieved pain, >=5/10, on a 0-10 scale

Success defined as 20 % reduction in pain score and 20 % reduction in drug toxicity.

Results

The mean CMM toxicity scores fell from 6.36 to 5.27 (17% reduction);

For the IDDS group, the toxicity scores fell from 7.22 to 3.59 (50% reduction, P =.004).

Results

- The IDDS group had significant reductions in fatigue and depressed level of consciousness ($P < .05$).
- IDDS patients had improved survival, with 53.9% alive at 6 months compared with 37.2% of the CMM group ($P = .06$).

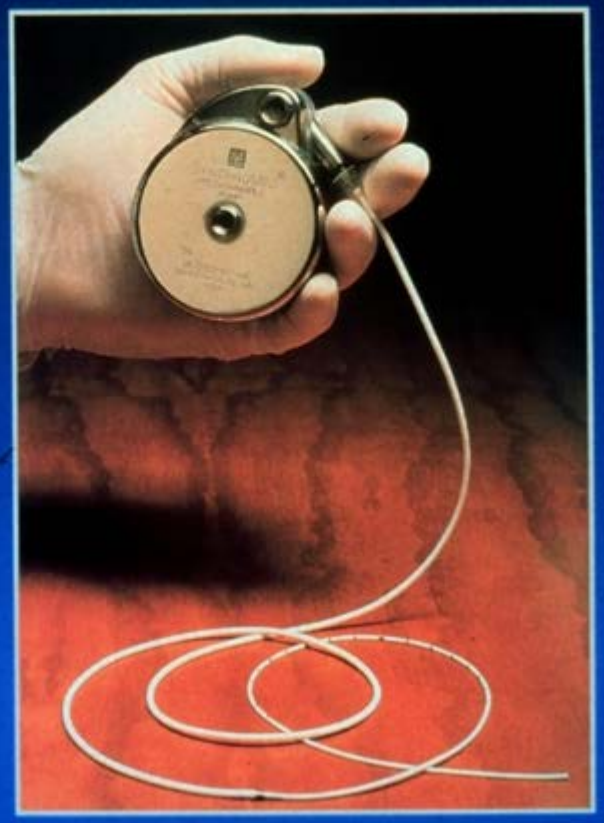
Results

- The study does not clearly apply to most cancer patients
- Applies to 14 % of patients who fail CMM

Intrathecal Management : Current Practice

- Hassenbusch, et al. Curr Practice in IT Therapy, JPSM 2000
- Survey of 413 physicians managing 13,342 pts -Nearly all for chronic pain (approx 33% of all implanted pumps)
- Drugs currently in pumps:
  - Morphine 48%
  - Morphine/Bupivacaine 12%
  - Hydromorphone 8%
  - Morphine/Clonidine 8%
  - Hydromorphone/Clonidine 8%
  - Morphine/Clonidine/Bupivacaine 5%
  - Morphine/Baclofen 3%
  - Other:Fentanyl/Sufentanil/Ziconotide/Meperidine/Methadone/Ropivacaine/Tetracaine/Ketamine/Midazolam/Neostigmine/Droperidol/Naloxone

SynchroMed® Infusion System



Intrathecal Opioids: Complications

- Infection
- CSF leak w/headache or hygroma formation
- Pocket site seroma
- Painful pocket site
- catheter kinking/migration/sterile granuloma (N=10)/cord or nerve root injury (immediately p op--case for regional or local), 1 case of spinal cord injury
- Overall incidence of “mechanical” delivery system complications 8.5% (Nitescu 1995 *Clin J Pain* N= 200)