

Neuraxial Anesthesia in the Parturient Receiving Intrathecal Chemotherapy

Acute Lymphoblastic Leukemia (ALL) in Pregnancy

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- Neuraxial anesthesia with ALL treatment must account for maternal-fetal risk
- Intrathecal chemotherapy poses unique anesthetic planning challenges
- No established guidelines for neuraxial placement post-IT chemo

Malignancy of lymphoid progenitor cells¹

- B (75%-80%)
- T (20%-25%)

1 in 75,000²

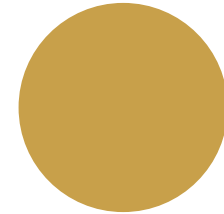
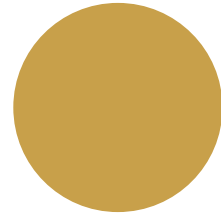
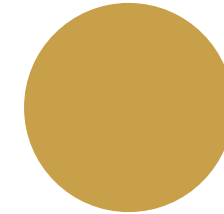
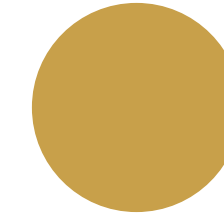
pregnancies affected by ALL

~15%³

of pregnancy-associated
leukemias

Acute Lymphoblastic Leukemia in Pregnancy

CLINICAL TIMELINE

29 Weeks	29–33 Wks	Post-LP	34 Weeks
 Presented with pre-B cell ALL diagnosis after increased cell counts found on routine blood work.	 Systemic chemotherapy + lumbar puncture with intrathecal cytarabine and hydrocortisone	 Post-dural puncture headache developed after LP, discussed epidural blood patch versus conservative treatment with APS. Managed conservatively with acetaminophen and caffeine	 Induction of labor at 34 +3 weeks, successful epidural placement, and spontaneous vaginal delivery Patient was discharged back to oncology service on post-partum day two.

KEY ANESTHETIC CONSIDERATIONS

- Epidural blood patch safety in hematologic malignancy
- Neuraxial efficacy after recent epidural blood patch
- Safe interval from last intrathecal chemotherapy to performing neuraxial block

Clinical Pearls for Peripartum Neuraxial Management

01

EBP Safety in Malignancy

Theoretical concern exists for CNS seeding via EBP; however, no clinical evidence supports this risk⁴. Conservative management can be considered as a first-line approach before EBP in patients with active hematologic malignancy.

02

Neuraxial Efficacy After EBP

In our review, there was no evidence or studies to support optimal timing of epidural placement after an EBP. Anesthesiologists should weigh the risks and benefits of EBP placement when it is known a labor epidural will be requested in short interval.

03

IT Chemo → Neuraxial Timing

No evidence-based guidelines define a safe interval between IT chemotherapy and neuraxial anesthesia. A pragmatic approach: wait five half-lives to ensure drug elimination prior to neuraxial block.

CSF HALF-LIVES OF IT AGENTS

Drug	CSF Half-Life	Kinetics
Cytarabine (Ara-C)	2–6 hrs	First
Liposomal Cytarabine (DepoCyt)	100–263 hrs	Zero → First
Methotrexate	4.5–8 hrs	First
Hydrocortisone	2.5–4 hrs	First
Dexamethasone	5.5 hrs	First



Multidisciplinary approach is essential — oncology, MFM, and anesthesia — to individualize peripartum analgesia in patients receiving IT chemotherapy.

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