Which Count Is Correct?

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CASE DESCRIPTION

A 77-year-old woman with Burkitt leukemia and lymphomatous meningitis was started on the PETHEMA (Programa para el Estudio de la Terapéutica en Hemopatía Maligna) protocol of chemotherapy. After the first chemotherapy cycle, the patient’s leukocyte count in the cerebrospinal fluid (CSF) was 0. On cycle 2, the patient received intrathecal liposomal cytarabine (Depocyte®). Two weeks later, there was a discrepancy in the laboratory results. The leukocyte count obtained for unstained CSF with a hemocytometer was 540/μL (540 \times 10^6/L), whereas flow cytometry and Wright–Giemsa staining revealed an absence of leukocytes. A photomicrograph of the CSF is shown in Fig. 1.

![Fig. 1. CSF sample from a patient with lymphomatous meningitis treated with Depocyte.](image)

QUESTIONS

1. What is the correct CSF leukocyte count?
2. Is the microscopical appearance of the structures seen in Fig. 1 typical for leukocytes?
3. Can Depocyte interfere with a CSF examination 15 days after its administration?

The answers are on the next page.
The falsely high leukocyte count obtained with the hemocytometer was caused by treatment with Depo cyt. This drug is a slow-release formulation of cytarabine encapsulated into liposomes that maintains the drug in the CSF for more than 14 days after injection (1). Cytarabine liposomes are spherules with a granular interior similar in appearance to leukocytes. Liposomes can be differentiated from leukocytes because the former vary in size (3–30 μm) and have one or more inclusions (2).

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References

News & Views

Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease during Pregnancy and Postpartum

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Pregnancy has a profound impact on the thyroid gland and thyroid function by increasing the demand for thyroid hormone production, which can lead to hypothyroidism in women with limited thyroidal reserve or iodine deficiency. Thyroid disease in pregnancy is common, clinically important, and time sensitive, and our knowledge about it is rapidly changing. Emerging data clarifying the risks of insufficient thyroid activity (even subclinical) during pregnancy on the health of the mother and fetus—and on the future intellectual development of the child—have led to new clinical guidelines for diagnosing and managing thyroid disease during this critical period.

New guidelines have been developed by an expert task force of the American Thyroid Association, the leading worldwide organization dedicated to the advancement, understanding, prevention, diagnosis, and treatment of thyroid disorders and thyroid cancer (1). The panel of international experts represents the disciplines of endocrinology, obstetrics, and laboratory medicine. The guidelines are now available free online in Thyroid at http://www.liebertonline.com/doi/abs/10.1089/thy.2011.0087.

The new clinical guidelines focus on several key areas in the diagnosis and management of thyroid disease during pregnancy and postpartum: thyroid function tests, trimester-specific reference intervals, hypothyroidism, thyrotoxicosis, iodine sufficiency, thyroid antibodies and miscarriage/preterm delivery, thyroid nodules and cancer, postpartum thyroiditis, recommendations on screening for thyroid disease during pregnancy, and areas for future research.

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