Uji Diagnostik Pewarnaan Vital Asam Asetat dan Iodin dalam Penentuan Tumor Ganas Solid = Acetic Acid and Iodine Staining for Determining Malignancy in Solid Tumors

Maulina Indah Anugrah Putri, author

Abstrak

Pendahuluan: Status batas sayatan merupakan faktor prognostik penting pada operasi tumor ganas solid. Frozen section (FS) sebagai baku emas batas sayatan intraoperatif butuh waktu tunggu dan alat FS mahal. Pewarnaan vital (PV) adalah metode pewarnaan pada sel hidup tanpa menyebabkan kematian sel. Tujuan penelitian ini adalah didapatkannya cara cepat untuk membedakan tumor ganas solid dengan jaringan normal.
Metode: Studi dilakukan pada pasien tumor solid yang dioperasi oleh Bedah Onkologi RSCM periode Desember 2017 – April 2018. Penelitian ini disetujui oleh Komite Etik FKUI/RSCM. Kriteria eksklusi adalah sampel berukuran <5 mm, jaringan nekrosis, dan tidak setuju ikut penelitian. Total 150 pasien tumor solid (payudara, tiroid, mulut, dan lain-lain). Spesimen dibelah dua (mirroring technique) sebagai sampel perlakuan dan kontrol. Sampel perlakuan disemprot dengan asam asetat 10%, dibilas, lalu disemprot iodin, lalu bilas dengan akuades. Perubahan menjadi putih (acetowhitening) merupakan hasil positif. Bila berubah kuning kecoklatan merupakan hasil negatif. Ahli PA di-blinding. Hasil PA fokus ganas atau ganas tergolong hasil positif. Hasil PA selain hasil tersebut dicatat sebagai negatif.
Analisis Data: Metode riset berdasarkan VIA (Visual Inspection Acetic Acid) dari WHO. Data dianalisis dengan IBM SPSS versi 25, menggunakan chi square.
Hasil: Dari 150 pasien didapatkan 520 sampel. Sensitivitas staining 82%, spesifisitas 63,5%, PPV 65,8%, NPV 80,5%. Pada subgrup tumor payudara epitelial sensitivitasnya 100%, spesifisitas 79,3%, PPV 66,8%, NPV 100 %. Pada kasus tiroid sensitivitas 65,7%, spesifisitas 83,3%, PPV 92%, NPV 45%. Kasus tumor rongga mulut sensitivitasnya 94,1%, spesifisitas 33,3%, PPV 88,9%, NPV 50%.
Diskusi: Staining ini bereaksi positif terhadap tumor ganas solid secara umum dan bereaksi negatif terhadap jaringan normal. Sensitivitas tertinggi pada kasus tumor payudara dan rongga mulut, dan spesifisitas tinggi pada kasus tiroid. Iodin bereaksi terhadap glikogen, namun struktur sel yang bereaksi dengan asam asetat adalah protein inti sel dan sitoplasma.
.....Introduction: The surgical margin is an important prognostic factor in solid cancer surgery. Frozen section (FS) as the gold standard for intraoperative surgical margin evaluation but requires waiting time and expensive FS devices. Vital staining (VS) is a method of coloring on living cells without causing cell death. The purpose of this study was to obtain a quick way to distinguish solid cancer from normal tissue or nonmalignant tumor.
Methods: The study was conducted on solid tumor patients who were operated on by RSCM Surgical Oncologic Division in the period December 2017 - April 2018. This study was approved by the Ethics Committee of FMUI / RSCM. Exclusion criteria were samples measuring less than 5 mm, tissue necrosis, and the patient did not agree to join the study. A total of 150 of solid tumors (breast, thyroid, mouth, etc.) patients. The specimen is divided (mirroring technique) as a treatment and control sample. The treatment

sample was sprayed with 10% acetic acid, rinsed, then sprayed with iodine, then rinse with distilled water. Acetowhitening reaction of the sample is a positive result. But if the sample turns brownish yellow, it is a negative result. The pathologist is blinded in this study. Focused or malignant lesion of PA results are classified as positive results. The results of PA other than these results are recorded as negative.
Data Analysis: Research method based on WHO (Visual Inspection Acetic Acid). Data were analyzed with IBM SPSS version 25, using chi square.
Results: From 150 patients 520 samples were obtained. Staining sensitivity was 82%, specificity was 63.5%, PPV was 65.8%, NPV was 80.5%. In the subgroup epithelial breast tumor, the sensitivity was 100%, specificity was 79.3%, PPV was 66.8%, NPV was 100%. In the case of thyroid sensitivity 65.7%, specificity 83.3%, PPV 92%, NPV 45%. For oral cancer cases sensitivity 94.1%, specificity 33.3%, PPV 88.9%, NPV 50%.
Discussion: This staining reacts positively to solid malignant tumors in general and reacts negatively to normal tissue. The highest sensitivity in breast and oral cavity tumors cases, and high specificity in the of thyroid cases. Iodine reacts to glycogen, but the cell structure that reacts with acetic acid is nuclear and cytoplasmic protein.