

수기 액상세포검사 Liqui-PREPTM의 세포보존력 평가 및 뇌척수액 세포검사에서의 적용: 세포원심분리법과의 비교

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Evaluation for Cytopreservability of Manual Liquid-Based Cytology Liqui-PREPTM and its Application to Cerebrospinal Fluid Cytology: Comparative Study with Cytospin

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Cerebrospinal fluid (CSF) cytology is an effective tool for evaluating diseases involving the central nervous system, but this technique is usually limited by its low cellularity and poor cellular preservation. Here we compared the manual liquid-base Liqui-PREPTM (LP) to the cytopsin (CS) with using a mononuclear cell suspension and we applied both methods to the CSFs of pediatric leukemia patients. The cytopresevability, in terms of cell yield and cell size, and the clinical efficacy were evaluated. When 2000 and 4000 mononuclear cells were applied, LP was superior to CS for the cell yield, 16.8% vs 1.7% ($P=0.001$) and 26.2% vs 3.5% ($P=0.002$), respectively. The mean size of the smeared cells was 10.60 μm in the CS, 5.01 μm in the LP and 6.50 μm in the direct smear (DS), and the size ratio was 1.7 (CS to DS), 0.8(LP to DS) and 2.1 (CS to LP), respectively. As compared to the cells in the DS, the cells in the CS were significantly enlarged, but those in the LP were slightly shrunken. Upon application to 109 CSF samples, 4 were diagnosed as positive for leukemia (positive), 4 had atypical cells and 101 were negative by CS; 6 were positive, one had atypical cells and 102 were negative by LP. For six cases, in which 4 were positive for leukemia and 2 of 4 had atypical cells by CS, they were positive by LP and they were also confirmed as positive according to the follow-up study. Three cases diagnosed as atypical cells (two by CS and one by LP), were confirmed as negative. In conclusion, these results suggest that LP is superior to CS for the cytopresevability and for rendering a definite diagnosis of cerebrospinal fluid.

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Key words : Liqui-PREP, Cytospin, Cell yield, Cerebrospinal fluid cytology

서 론

뇌척수액 세포진 검사는 중추신경계질환의 염증성 또는 악성 여부를 확인하는데 중요한 역할을 하며, 백혈병이나 림프종 환자에서는 화학요법 및 방사선 치료 결정에 중요한 지표인 중추신경계 침범 여부를 판정하기 위하여 실시된다.¹⁻³ 뇌척수액은 통상적으로 요추천자법으로 채취하는

데 검체의 양이 소량이고 포함된 세포의 밀도가 낮은 경우가 많아 여러 차례 반복검사를 하게 된다. 근래에는 세포밀도가 낮은 소량의 검체에서도 효과적으로 세포를 슬라이드에 도말할 수 있는 방법으로 세포원심분리법(Cytospin)이 널리 이용되고 있으며, 뇌척수액 세포진 검사에 많은 도움이 되고 있다.^{4,5} 세포원심분리법으로 도말된 슬라이드에서도 원리적 특성상 원심력으로 인한 세포 변성과 손실이