

Cystoscopic Diagnosis of Bladder Cancer by Intravesical Instillation of 5-Aminolevulinic Acid Induced Porphyrin Fluorescence—The Singapore Experience

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Abstract

Objectives: 1) To determine whether fluorescence cystoscopy after intravesical administration of 5-aminolevulinic acid (5-ALA) is more sensitive in detection of dysplasia and bladder cancer when compared with conventional cystoscopy. 2) To determine the safety of using 5-ALA. **Materials and Methods:** A 3% 5-ALA solution was instilled intravesically before cystoscopy in 41 patients. The 5-ALA-induced porphyrin fluorescence was excited by violet light from a xenon arc lamp (1375-440 nm). **Results:** Among the 175 biopsies obtained, the sensitivity of the fluorescence cystoscopy was greater than that of conventional cystoscopy (89.1% versus 65.6%, $P < 0.05$). Specificity was at 64.8% and 83.8% respectively with $P < 0.05$. Duration of ALA instillation did not seem to affect the sensitivity and specificity of photodynamic diagnosis. The procedures were well tolerated by all patients with no additional complication. **Conclusions:** Fluorescence-guided biopsies are more sensitive than random biopsies in detecting dysplasia or bladder cancer without additional risk or complication. The duration of ALA instillation did not seem to affect the accuracy of photodynamic diagnosis.

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