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# 5-Minolevulinic acid-induced fluorescence endoscopy for detection and photodynamic clearance (PDTC) of lower urinary tract tumours; what is new?

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**Background:** The early detection of carcinoma is very essential for the diagnosis and prognosis of a bladder cancer patient. 5-aminolevulinic acid induced fluorescence cystoscopy can detect more tumour lesions comparing to standard cystoscopy is a well-documented fact. The goal of our study is to assess the influence of fluorescence cystoscopy using 5-AlA as a natural amino acid oral powder with the conventional delta-aminolevulinic acid (ALA) or its derivative, hexaminolevulinate (HAL, Hexvix), installation. The oral form of 5- ALA in clearance of other urological malignancies was evaluated. The possible apoptotic activities of this substance in the treatment of bladder cancer as a new option and the benefit of oral form in detecting other urological malignancies during surgery will be outlined.

**Methods and results:** In retrospective and prospective study, 74 patients with primary or recurrent stage Ta Tl bladder transitional cell carcinoma treated with transurethral resection were enrolled. In 15 patients (group A) the oral form of 5-ALA (5-Aminolevulinic acid (SBI-Pharma-Japan). 20 patients (Group B), we used hexaminolevulinate (HAL, Hexvix). Thirty nine patients (Group C) were taken from records as the medic Germany is not producing the 5 ALA Delta from for intravesical installation any more. The patients were followed using standard cystoscopy and urinary cytology. In both groups, white light and blue light were used for comparison. The white light DATA was categorized as C I and blue light (visible blue light with wavelength of 420 nm) as C II, Recurrence free interval was evaluated in whole groups and also for single and multiple and for primary and recurrent tumours separately. The median time to recurrence was 8.05 months in group A and was significantly shorter than 13.54 months in group B (p=0.04, log-rank test).

**Conclusions:** 5-Aminolevulinic acid induced fluorescence cystoscopy used during transurethral resection reduces the early recurrence rate in stage Ta Tl bladder transitional cell carcinoma. This fluorescent oral form of 5-ALA, substance can be a useful tool in the treatment of Bladder cancer by inducing apoptosis when exposing the 5-ALA loaded tumour cell to external source of energy. This is a new research going on in our centre to study the possible use of external energy source after loading the cells with 5- Aminolevulinic acid. The patient will take the tablet 4 hours prior to surgery and the bladder will be inspected using white/blue light to stimulate the cell to produce the Protoporphyrin IX from the loaded cells and to explore the hidden or flat cancer cellssocancer cell will be visible up to 1 mm with this method. The oral form opened to us new advantages in using this technology indetecting not only bladder cancers but ureteral renal and even prostatic malignancies in open, laparoscopic or robotic surgeries.

## Biography

Ziad Al-Naieb has completed his MBChB at the age of 24 years from College of medicine at University of Baghdad and postdoctoral studies from Johannes Gutenberg, Mainz Germany MD at urology clinic and Poly-Clinic Mainz Germany and Finished his PhD at the university of Mainz Germany and then completed his Fellowship of the Royal college of Physicians and Surgeons of Glasgow, United Kingdom. He became Full Professor in urology in 1994. Currently, he is the Vice Dean for clinical affairs and Chairman of Surgery at the Arabian Gulf University since 2008 director of Urology Clinics at King Abdulla medical Center and Consultant urologist at Royal Bahrain and Bahrain Specialist Hospital in the Kingdom of Bahrain. He has published more than 33 papers in reputed journals and serving as an editorial board in many national and international medical journals including our reputed journal. His main researches are directed to Stem cell therapy in urology, early detection of Bladder malignancies and photodynamic therapy of Bladder Cancers.

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