SUMMARY AND RECOMMENDATIONS

Urinary incontinence (UI) defined as the complaint of any involuntary leakage of urine. It is a distressing and debilitating condition that is becoming more prevalent in our community. It significantly impacts on quality of life, both physically and psychologically.

In the last few decades MRI have become the gold standard technique for investigating a case of female urinary incontinence. A major advantage of MRI is the ability to visualize the three compartments of the pelvic floor concomitantly. However its greatest advantages were the high soft tissue resolution that allows direct visualization of the urethral supporting structures (muscles, fascia and ligaments) in order to pinpoint the anatomical defects leading to urinary incontinence by static MRI images. Moreover it is non invasive and lacks ionizing radiation. However the less physiologic supine position during imaging and high cost remained a major disadvantage.

Recently transperineal ultrasound has evolved as a new promising method of investigating females complaining of urinary incontinence. It also lacks ionizing radiation. Its wide availability, lower price and shorter duration of examination have encouraged many researchers to study its capabilities yet an overall knowledge of pelvic floor ultrasonography is not widespread. Transperineal ultrasound is relatively easy to perform technique for the assessment of urethral morphology and relationship of the urethra with bladder and pubic symphysis. The application of ultrasonography is mainly subject-

related and the diagnostic accuracy depends mainly on the experience and ability of the investigator.

Based on our study we found that 80% of the patients have coexistent pelvic organ prolapse in the other two compartments that requires surgical repair. Therefore accurate assessment of all compartments of the pelvic floor is essential in planning surgical reconstruction in order to minimize the risk of recurrence and repeated surgery.

Our study revealed that the commenest defect in the urethral support is ligamentous defect found in 86.7% of the cases. Though the suburtheral ligament is newly discovered all patients with ligamentous defects had injury of the suburethral ligament either alone or combined with other ligaments yet till now there is no specific surgical approach for treatment of ligamentous injuries. The second common defect is fascial defect found in 70% of the patients. Muscle affection is the least common defect found in 66.7% of he patients in the form of 36.7% muscular weakness and 30% muscle tear.

In conclusion according to our study MRI was positive in 93.3% of the cases while ultrasound was positive in 86.7% of the cases. All the patients that had functional abnormality on ultrasound proved to have anatomical defects on MRI. Based on these results using 2D ultrasound as screening modality to detect patients with functional abnormality to be referred to perform MRI in order to detect the anatomical defects can guide the way to more successful patient

management and consequently decreasing the rate of postoperative recurrence.

Recommendations:

In the mean time and based on our research results, we suggest that:

- 2D ultrasound to assess bladder neck hypermobility, degree of urethral rotation, urethral length, retrovesical angle and urethral vascularity can be efficiently used as screening modality to detect patients with functional abnormality.
- Further study in ultrasound on large number of normal controls to establish cut off value for different measurement is recommended. A standard approach and more objective parameters should be used.
- Applying 3 & 4D US for anatomical assessment of pelvic floor.
- Further MRI is recommended to detect the anatomical defects which can guide the way to more successful patient management and consequently decreasing the rate of postoperative recurrence.