SUMMARY AND CONCLUSION

Our study was carried out on 61 patients with clinical suspicious of genitourinary tuberculosis (GUTB) based on the chronic urinary tract problems not responding to treatment with a sterile urine culture. Those patients were collected from the outpatient clinics of urology & nephrology center, at Mansoura city. They were 35 males & 26 females and their age ranged between 15 and 57 years (35.2 ± 0.78)

In our study group, 67.2% of patients were positive ZN smears. This was statistically non-significant when compared to the results of culture (> 0.05) and FastPlaque (> 0.05), but highly statistically significantly different when compared to PCR results (<0.001).

We found that PCR helped in diagnosis of 9l.8% of cases (56/61) with a non significant difference between results of fast plaque tests and that of PCR tests at 0.05 level of significance, with a sensitivity of 82%, and a positive predictive value 75%. This is also true when the results of PCR and that of L.J. culture were compared, but with a sensitivity of 94% and a positive predictive value 0.8.

When PCR results were compared to Z.N. stain results, we found that a highly statistical significant difference between the results of PCR tests and that of Z.N. smears did occur with a sensitivity 100% and positive predictive value 0.73. and a negative

predictive value 1. This reflects a very good combination of methods to be very sure of a negative result for GUTB, i.e. combination of PCR technique & ZN stained smears.

When the results of the culture were considered, it proved to diagnose 78.68% of patients with a non-statistically significant difference between it & results obtained from stained smears with ZN (>0.05) and with PCR results (>0.05). On the contrary to the results obtained when comparing the cultural results with those of the FastPlaque results. Highly statistical significant results were obtained which confirmed the previous explanation that both methods are detecting the presence viable organisms.

When it comes to the newly introduced method into routine work in industrialized countries & lately as research in non-industrialized countries, namely the FastPlaque TB phage amplification technology, and its relation to the available conventional methods i.e. smears, cultural on LJ solid media, & the more sophisticated method PCR, it was noticed that:

1. FPTB correlates highly with culture. Sensitivity was 96%, PPV 0.9. and p was < 0.001) This might be because both techniques depend on the presence of viable organisms.

2. PCR correlates very highly with ZN staining method Sensitivity was 100%, PPV 0.7, and p was <0.001). One must realize that these two both techniques depend on presence viable & non viable organism.

3. No correlation was found between FPTB and neither ZN nor PCR. Sensitivity was 83%, PPV 0.6, and p was >0.05)

4. The highest percentage of isolation belongs to PCR technique (91.8%) followed by FastPlaque,TB (83.6%) then LJ, (78.7%)& lastly ZN.(67.2) This reflects how close is the new rapid technique, to the the sophisticated expensive molecular technique.

In conclusion, this study supports the clinical utility of FASTPlaque TB in the rapid diagnosis of GUTB. The test may be used in conjunction with sputum smear microscopy to detect additional cases that would be missed by smear alone. The test offers the potential for widespread application in high burden countries due to its reliance on basic microbiological techniques and its lack of requirement for specialized equipment. The acceptance of such a new technology into routine diagnostic algorithms will follow the demonstration of its positive impact on the overall cost of effective TB diagnosis, including minimizing clinic visits, unnecessary treatment and testing of misdiagnosed patients, as well as reducing the opportunity for further spread of the disease.