

INTRODUCTION

- Sexual assaults are usually unwitnessed, so victim's statements may be the only direct evidence that it has occurred. Medical examination and correct biological samples collection are of unequivocal importance.
- Presence of spermatozoa in cervicovaginal or anal smears, elevated acid phosphatase and more recently the presence of Y-STR profile in the victim's evidences, could be crucial to corroborate victim's testimony.
- The Y chromosomes is far the most important scientific evidence, not only due to it's gender specificity and easy amplification in a male/female mixtures, but also because it can easily contribute for the number of unrelated male contributor's estimation in a biological evidence.
- The aim of this study is to ascertain a few characteristics concerning sexual assault and a Y-STRs profile obtention, which may help to prove or disprove a link between individuals and objects or places.

RESULTS

- Descriptive analysis reveal that victim's age varies between 1 to 90 years old but almost 20% were under 12 years old. 10% of the victim's declared that they had consented sexual intercourse, in the previous 48 hours. In those cases biological evidence Y-STRs profile was compared with their partner's.
- Concerning variables that could affect Y-STRs profile obtention, 32% of the victim's declared that they had a shower before the examination. The mean time interval between intercourse and the collection was about 15 hours, and this is also the mean time for the Y-STRs profile obtention(Fig.1).
- Logistic regression demonstrates that the variables such as time interval between intercourse and biological collection severely interfere with the male material detection. Victim douching after intercourse is another factor which adversely affect Y-STRs haplotype detection and therefore agressor identification (Fig.2).

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CONCLUSIONS

- In alleged rape cases the absense of lab evidences makes more difficult to prove the agressor's identity. The DNA identification is a fundamental tool for this purpose.
- Many factors can affect adversely Y-STRs haplotype obtention in biological samples. Time between the intercourse and biological samples collection, and douching after intercourse are according to this study, the most significant one's.
- In conclusion, Y-STRs study, due to their sensitivity and specificity, should be used in every biological samples from sexual assault cases, contributing to final identification of perpetrator's, and to corroborate the victim's story.

Bibliography

- Kim A. Collins and Allan T. Bennett, Persistence of Spermatozoa and Prostatic Acid Phosphatase in Specimens From Deceased Individuals During varied Postmortem intervals, The American Journal fo Forensic Medicine and Pathology, 22(3):228-232,2001
- José Vieira *et al* , Y-STRs in Forensic Medicine: DNA analysis in Semen Samples of Azoospermic individuals, J.Forensic Sci,2007,vol 52,no. 3

METHODS

- Biological samples from a wide range of specimens collected from sexual assault cases were studied (n=782).
- Vaginal and anal glass slide smears were fixed in alcohol and stained with Papanicolau's and Harris Hematoxilin Solution. For the phosphatase test a commercially available test paper strip was used (Phosphatesmo KM).
- DNA was extracted by phenol chloroform method and PCR amplification was performed with Powerplex®Y (Promega) and AmpF1STR® Y-File™ (Applied Biosystems). Fragment analysis was done by capillary electrophoresis in an ABI 3130xl.
- Results were crossed with other victim information such as age, alleged assailant number, time between the intercourse and biological samples collection, and other variable which adversely affect the recovery of male cells, such as douching after intercourse. Significant variables were entered in a logistic regression model using SPSS 17.0 and R version 2.6.2 (2008-02-08) for data analysis.

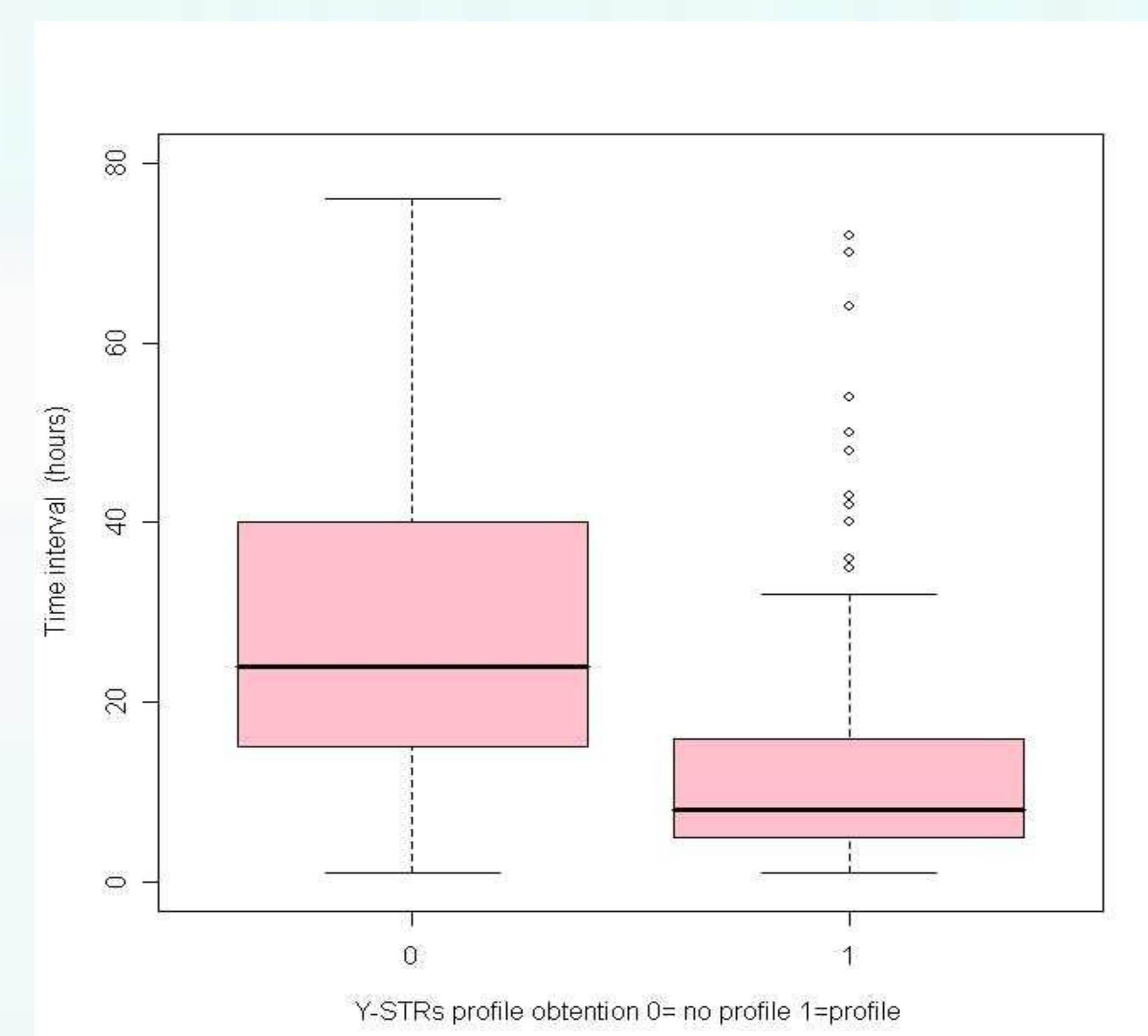


Fig 1- boxplot representing Y-profile obtention with time

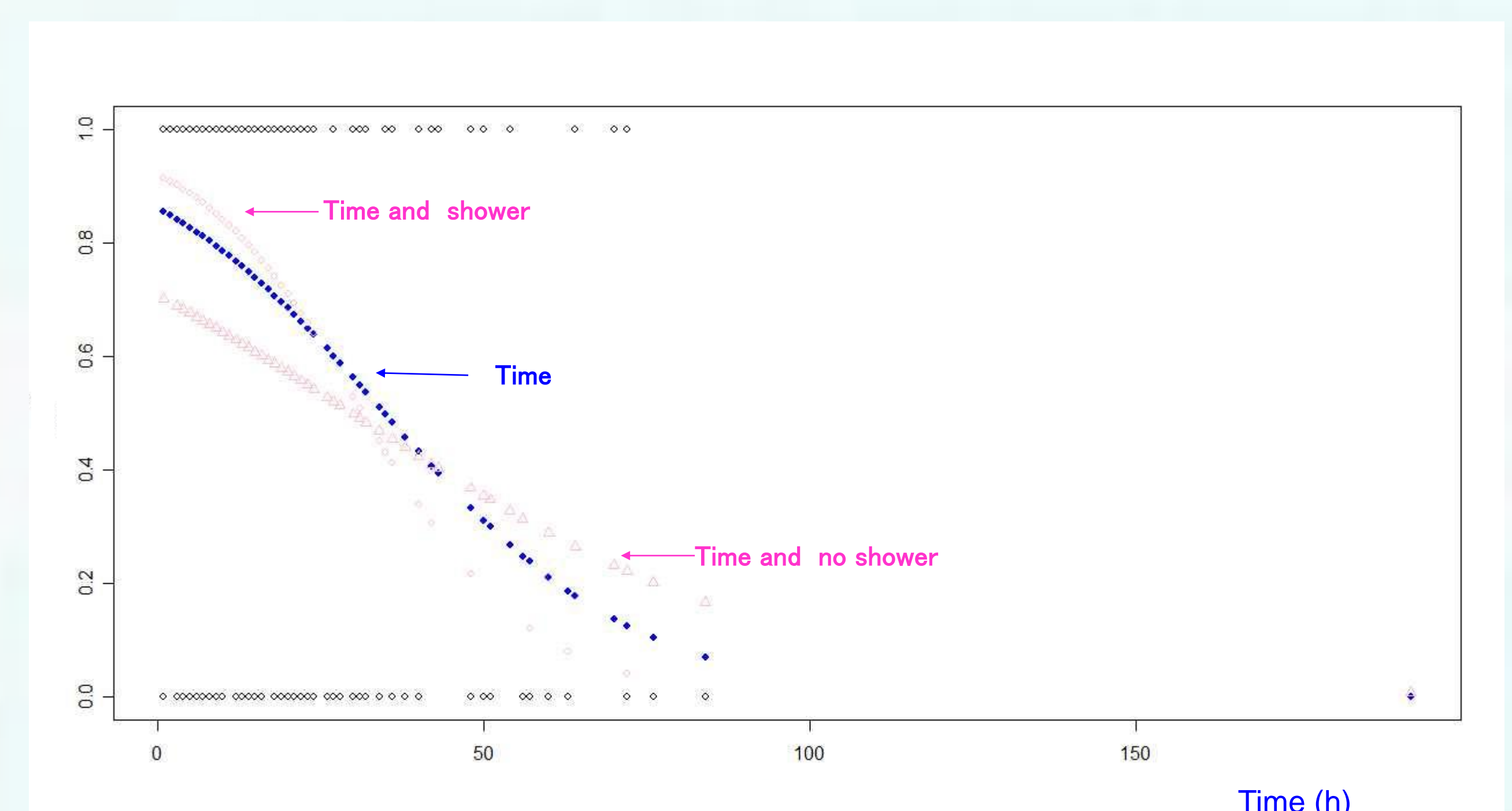


Fig. 2 – plot of logistic regression under tree different models.

