

PLASMA EPSTEIN-BARR VIRAL DNA IN THE DETECTION OF LOCALLY RECURRENT NASOPHARYNGEAL CARCINOMA

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OBJECTIVES

- **Plasma EBV DNA** has been used in the detection of primary nasopharyngeal carcinoma (NPC) but **has not been thoroughly evaluated in the detection of locally recurrent or persistent NPC**
- To evaluate its sensitivity and specificity in the detection of locally recurrent and persistent NPC

METHODS

- **Prospective case-control study** evaluating subjects with biopsy-proven NPC and controls with a history of NPC, now proven disease-free by clinical examination and MRI
- **Plasma EBV DNA** with a value of **0 being normal**
- **Receiver operating characteristic curve (ROC)** to determine an optimal EBV DNA cut-off value
- **Sensitivity, specificity, positive predictive value (PPV) and negative predictive values (NPV)** were determined

RESULTS

- 59 males and 21 females with an average age of 57.2 ± 9.7 and range 27 - 79
- **24 recurrent** cases vs **56 control** cases
- Spearman's rank correlation coefficient showed $r = 0.554$ ($p = 0.017$). This suggested a **positive and moderate correlation between EBV DNA level and the T-classification at recurrence**
- **ROC curve suggested an optimal cut-off value of 2.00**
- **Area under the curve (AUC) = 0.812** suggested that EBV DNA level is a **good predictor of NPC local recurrence**

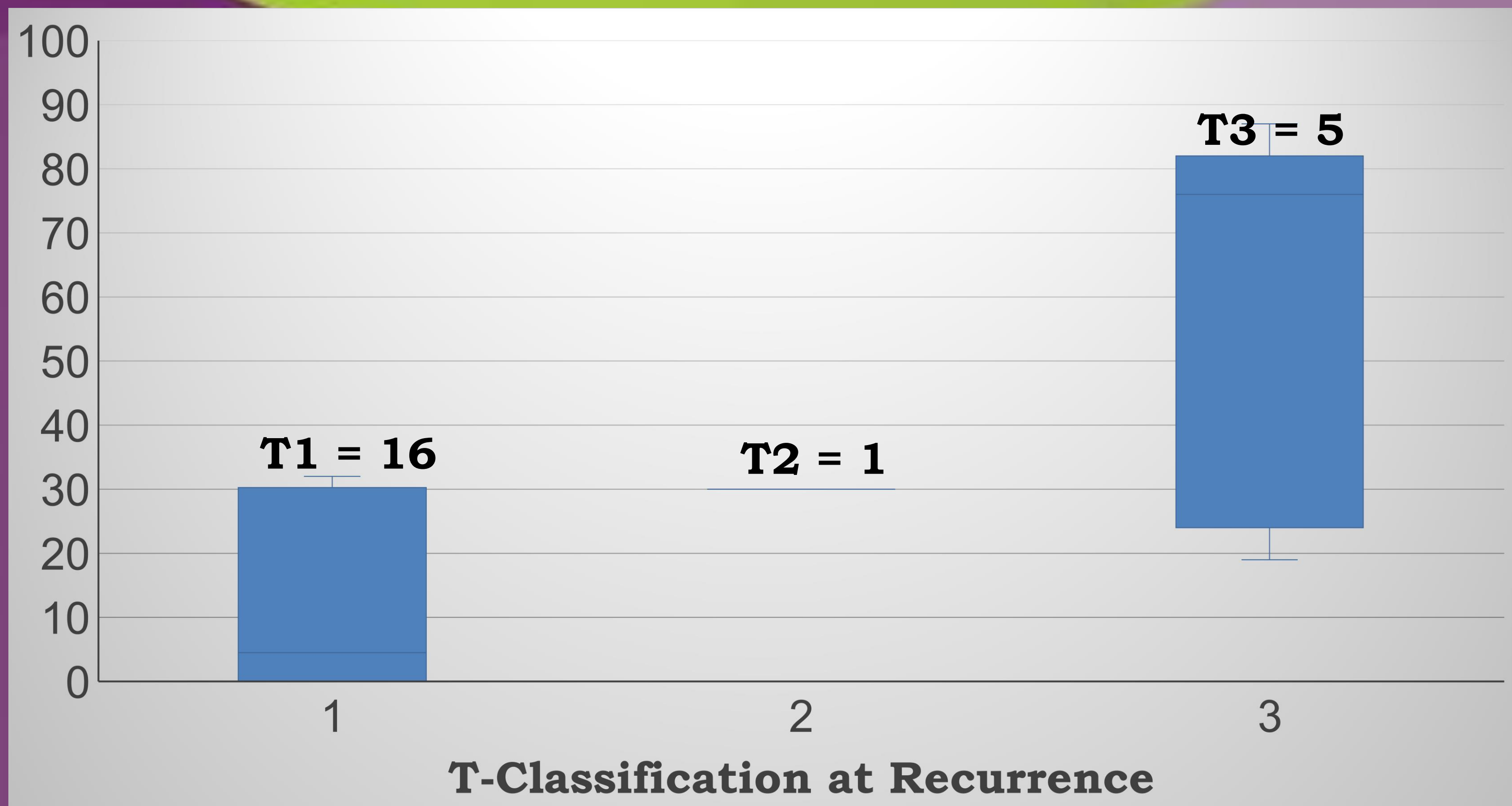


Fig.1 EBV DNA level at different T-classification, 2 out of the 24 locally recurrent cases had unknown T-classification

CONCLUSION

- **Plasma EBV DNA** is **specific** yet **not sensitive** in detecting locally recurrent NPC
- The **EBV DNA level correlates with the T-classification at recurrence**
- The test **may provide an additional surveillance modality** in detecting local recurrence
- Further study with a larger sample size is required to validate its use

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	Estimate	95% C.I.
Sensitivity	69.23%	48.21% - 85.67%
Specificity	94.64%	85.13% - 98.88%
PPV	85.71%	65.96% - 94.89%
NPV	86.89%	78.77% - 92.21%

Table 1 Sensitivity, Specificity, PPV & NPV with **EBV DNA cut-off value = 2.00**

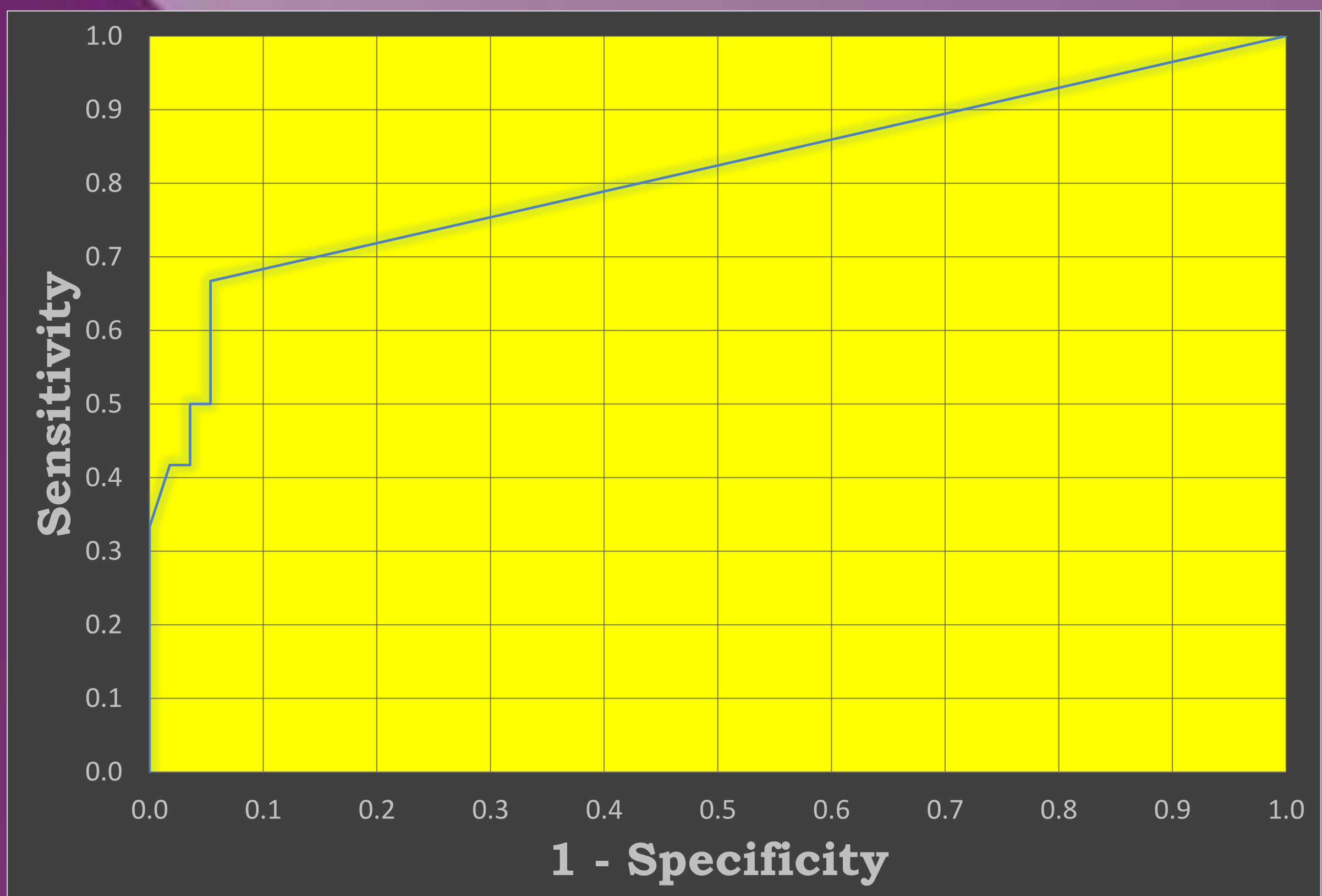


Fig.2 ROC curve, optimal cut-off value was obtained by maximizing sensitivity + specificity



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