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According to current WHO guideline, diagnosis of GBM was confirmed by tissue based expression of IDH-1, p53 and EGFR. Biomarkers **hTERT** and **HMGA1** were quantified in formalin fixed paraffin embedded tissues (FFPE) in areas with the maximum proliferation. This was followed by assessing levels of IL-6, NLR, TIMP-1 and YKL-40 in plasma as well as that of **hTERT** and **HMGA1** in serum.

IDH-1, p53, EGFR, hTERT and HMGA1 by IF-IHC: To ascertain the expression of IDH-1, p53, EGFR, **hTERT** and **HMGA1** molecules in FFPE tissue, immunofluorescence based immuno-histochemistry (IF-IHC) was performed as per protocol discussed earlier (Gandhi *et al.*, 2016). The slides were incubated overnight at 4°C with primary antibodies IDH-1 (Santa Cruz Biotechnology, USA, 1:1000 dilutions), p53 (Bethyl Laboratories, USA, 1:1000 dilutions), EGFR (Bethyl Laboratories, USA, 1:1000 dilutions), **HMGA1** (Abcam, UK, 1:1000 dilutions) and **hTERT** (Abcam, UK, 1:1000 dilutions), followed by treatment with host specific secondary antibodies (FITC labelled, 1:300 dilutions), washed and mounted.

All images were observed with Plan-Neofluar 40 x 0.75 NA lens. With regard to the protein of interest, areas with highest protein labelling were considered and approximately 1000 cells per section were captured with 40-fold magnification followed by digitalization and analysis by the Case Data Manager Expo 4.5 software (Applied Spectral Imaging, Edingen Neckarhausen, Germany). These images were exported as TIFF files and analyzed. Quantification of fluorescence signals of the identified molecular markers, **hTERT** and **HMGA1** was carried out using ImageJ software (National Institute of Health, USA).

Negative expression of IDH-1 and over-expression of p53 and EGFR confirmed the case as primary GBM at the molecular level. Amplified expression of markers, **hTERT** and **HMGA1** in tissue was concurrent with GBM grade-IV and Ki-67 proliferation index (Figure 2, Table 1) and also correlated with the OS (Supplementary Table S1). However the values of **hTERT** and **HMGA1** markers in FFPE tissue of the subject in question were found to be lower than the threshold values of these markers established for the GBM group (n=30) in our study (Supplementary Table S2).

Following this, the five molecular markers identified for systemic immunophenotypic signature were quantified.

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