

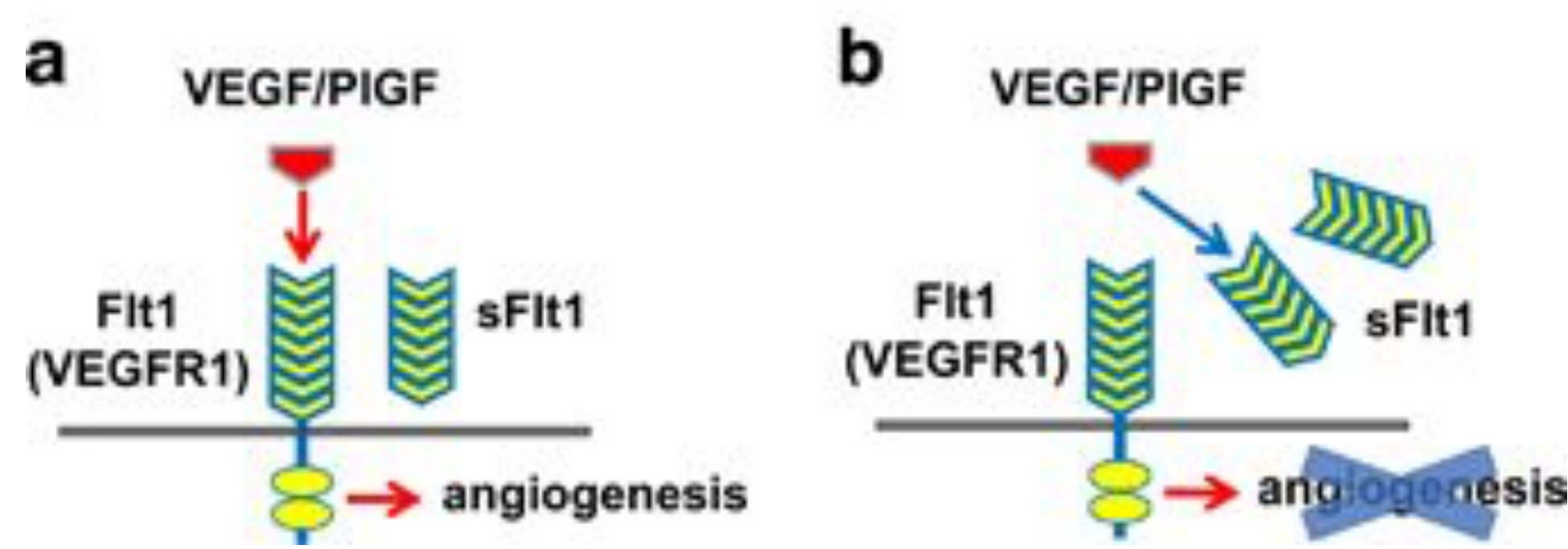
## DISRUPTION OF BALANCE OF OXIDATIVE STRESS-ASSOCIATED ANGIOGENESIS IN HEART FAILURE

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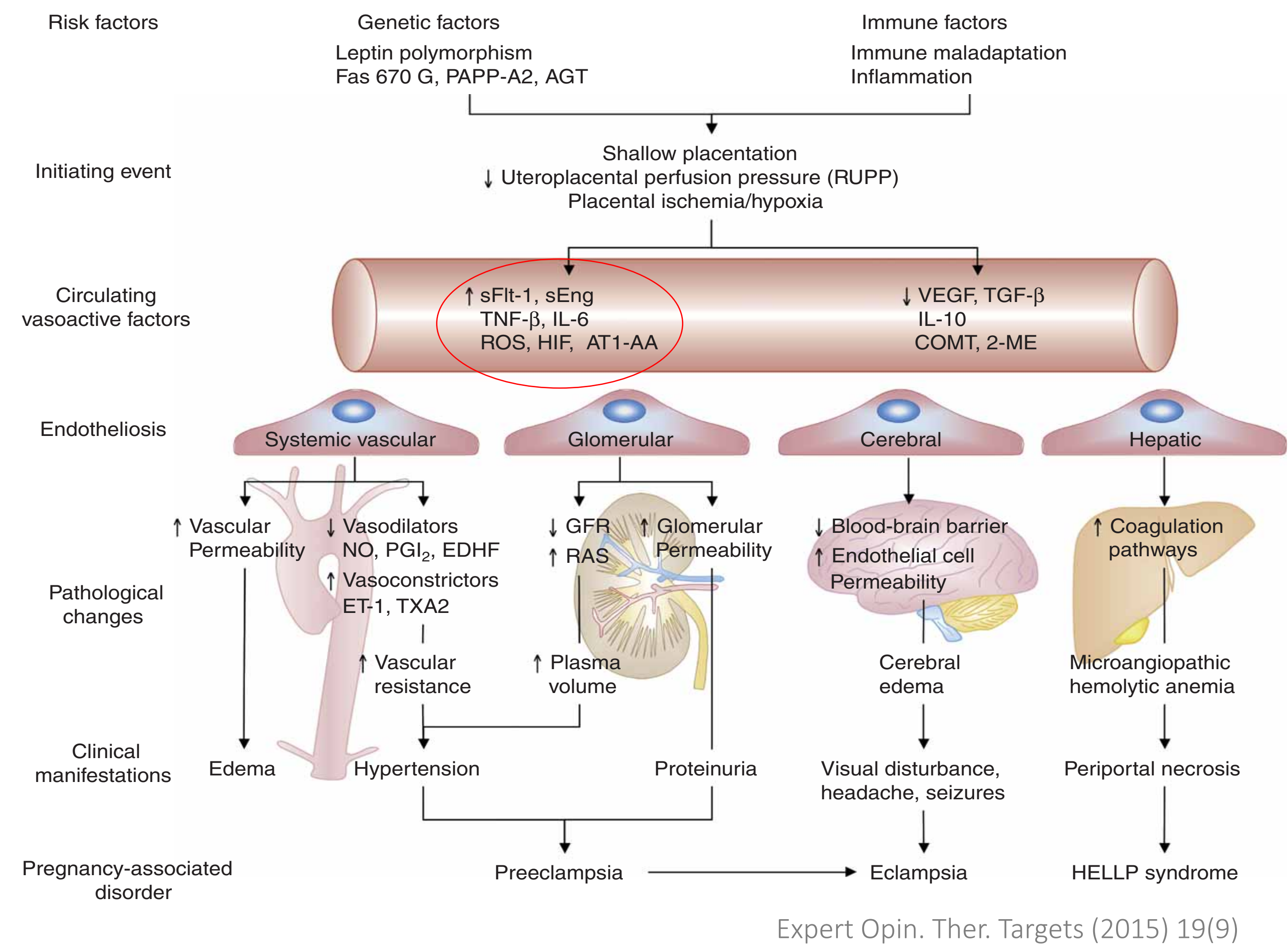
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**BACKGROUND:** Hypoxia may be a concomitant state in heart failure patient, inducing the disruption of balance of oxidative stress-associated angiogenesis. Soluble fms-like tyrosine kinase-1 (sFlt-1 or VEGFR1) and erythropoietin (EPO) activates neovascularization and reduces apoptosis.



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**OBJECTIVE:** We investigated the role of sFlit/VEGFR1 and EPO biomarkers in heart failure (HF) patients.

**METHODS:** In total of 59 hospitalized patients with acute decompensate heart failure in class II or IV of NYHA were assessed the biomarkers of sFlt-1 and EPO. These biomarkers were determined by ELISA. Subgroup analysis was performed according to the left ventricular ejection fraction in light of the current European Society of cardiology guidelines. Mann-Whitney test, Spearman correlation and ANCOVA analysis were applied. Statistical significance was considered for P<0.05.

### RESULTS

- Mean ejection fraction was 48.45±17.68%

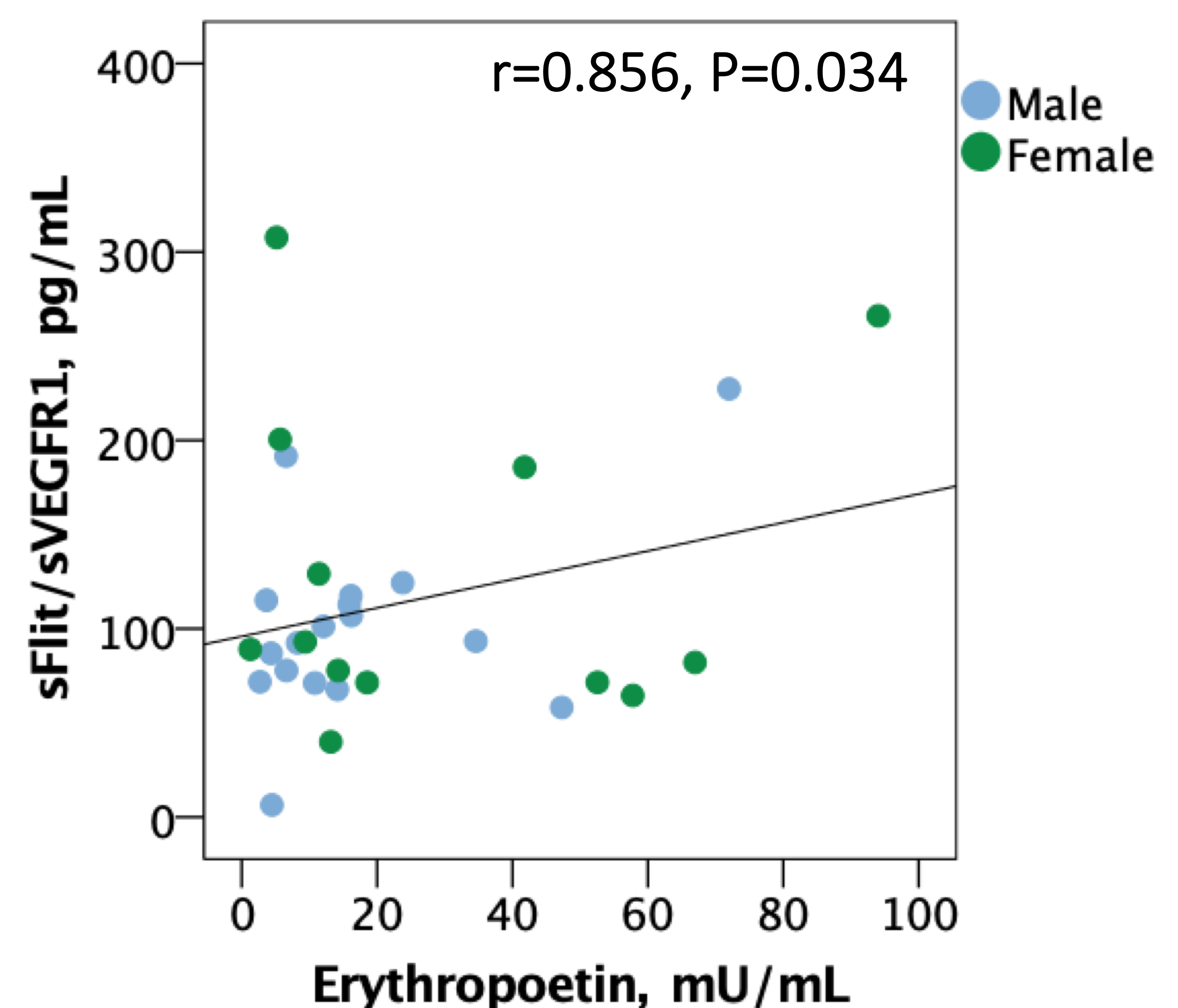
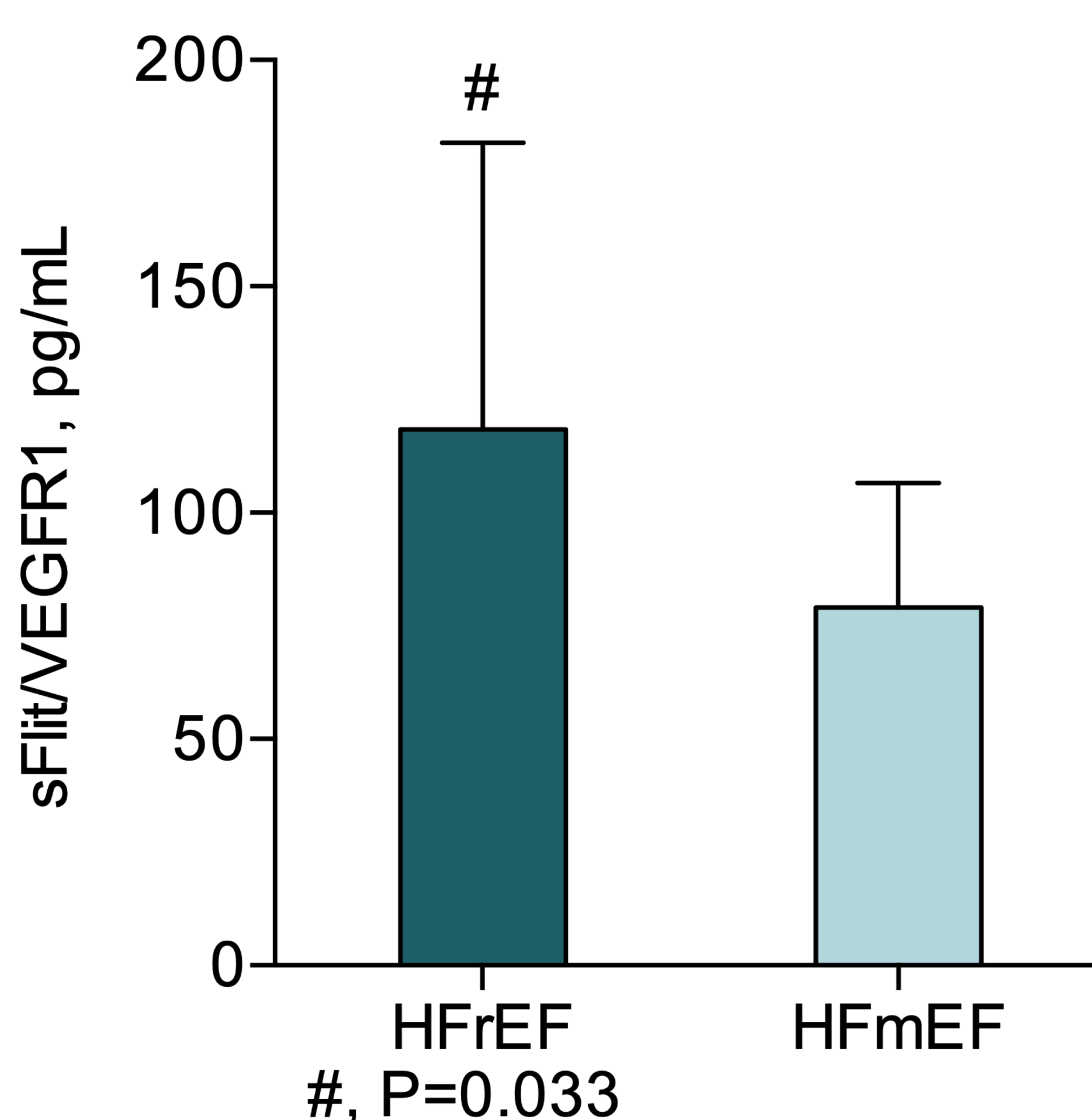
N=59 HF patients  
Mean age: 80.66 (SD 10.78)

52.9% female

28.1%  
HF<sub>r</sub>EF<40%

21.1%  
HF<sub>m</sub>EF 40-49%

50.9%  
HF<sub>p</sub>EF



### CONCLUSION:

In our study, higher levels of sFlt-1/sVEGFR1 were found in patients with HFrEF, which may untangle a possible role of hypoxia status in the angiogenic profile of heart failure patients.