

# Anti-HDV-IgM as a marker of disease activity in hepatitis delta

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## INTRODUCTION

Hepatitis delta frequently leads to liver cirrhosis and hepatic decompensation. As treatment options are limited, there is a need for biomarkers to determine disease activity and to predict the risk of disease progression. Anti-HDV-IgM levels may correlate with histological and biochemical activity in HDV infection. However, the exact mechanisms behind this association are unclear.

## METHODS

Anti-HDV-IgM-testing was performed using the **ETI-DELTA-IGMK-2 assay** (Diasorin). In addition, fifty-four cytokines, chemokines and angiogenetic factors were measured in sera using **multiplex technology** (Bio-Plex System).

## CONCLUSIONS

- ❖ Serum anti-HDV-IgM is a robust, easy-to-apply and relatively cheap marker to determine disease activity in hepatitis delta
- ❖ which has prognostic implications
- ❖ High anti-HDV-IgM levels indicate an activated immune system
- ❖ which leads to a suppression of HBV-DNA but not of HDV-RNA

## PATIENTS

**HIDIT-2**  
(n=120) \*

**MHH cohort**  
(n=78)

**Gender; male:** 79 (66%)  
**Age:** 40 (20-65)  
**Region of origin; E.M., E.E., others:**  
68;44;8 (57;37;6%)  
**Cirrhosis at baseline:** 51 (43%)

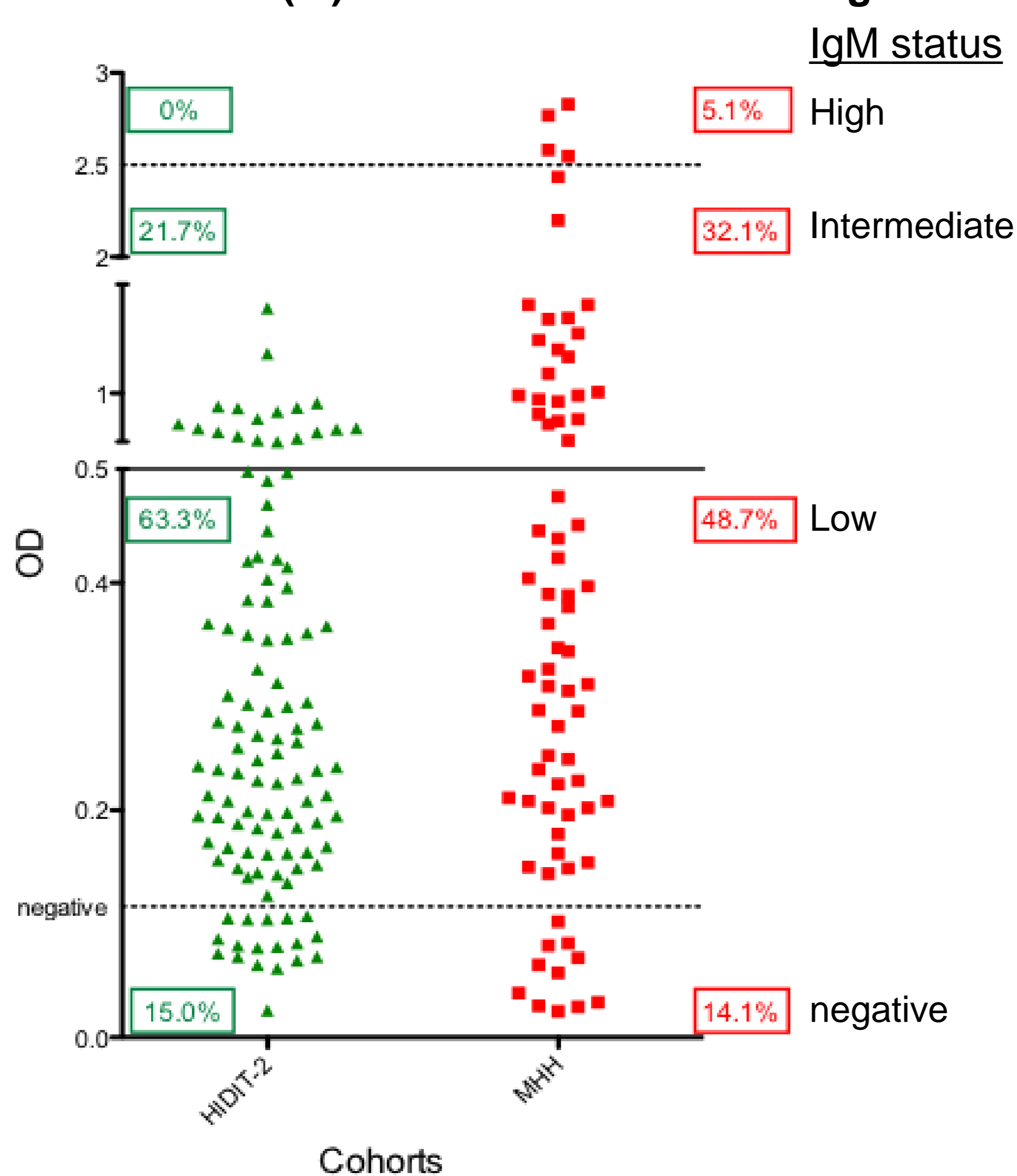
**Gender; male:** 49 (63%)  
**Age:** 40 (17-61)  
**Region of origin; E.M., E.E., others:**  
28;30; 20 (36;39;25%)  
**Cirrhosis at baseline:** 33 (42%)  
**Follow up:** 3 y (0.6-12)

## Variables associated with IgM status

HIDIT-2	ANOVA	MHH cohort	χ <sup>2</sup> -test
Variables	p-value	Variables	p-value
ALT (IU/L)	0.04	ALT (> ULN)	0.03
AST (IU/L)	0.02	γGT (> ULN)	0.09
HBV-DNA (log)	<0.01	Albumin (< LLN)	0.09
IL-8	0.04	Endpoints	0.05
IL-17	0.04		
IP-10	0.02		
MCP-1	0.04		
IL-2RA	<0.01		
IL-16	0.03		
LIF	0.04		
SCF	0.03		
SDF-1a	0.03		
TNF-b	0.05		
Staging (ISHAK)	<0.01		
Grading (ISHAK)	0.02		

## RESULTS

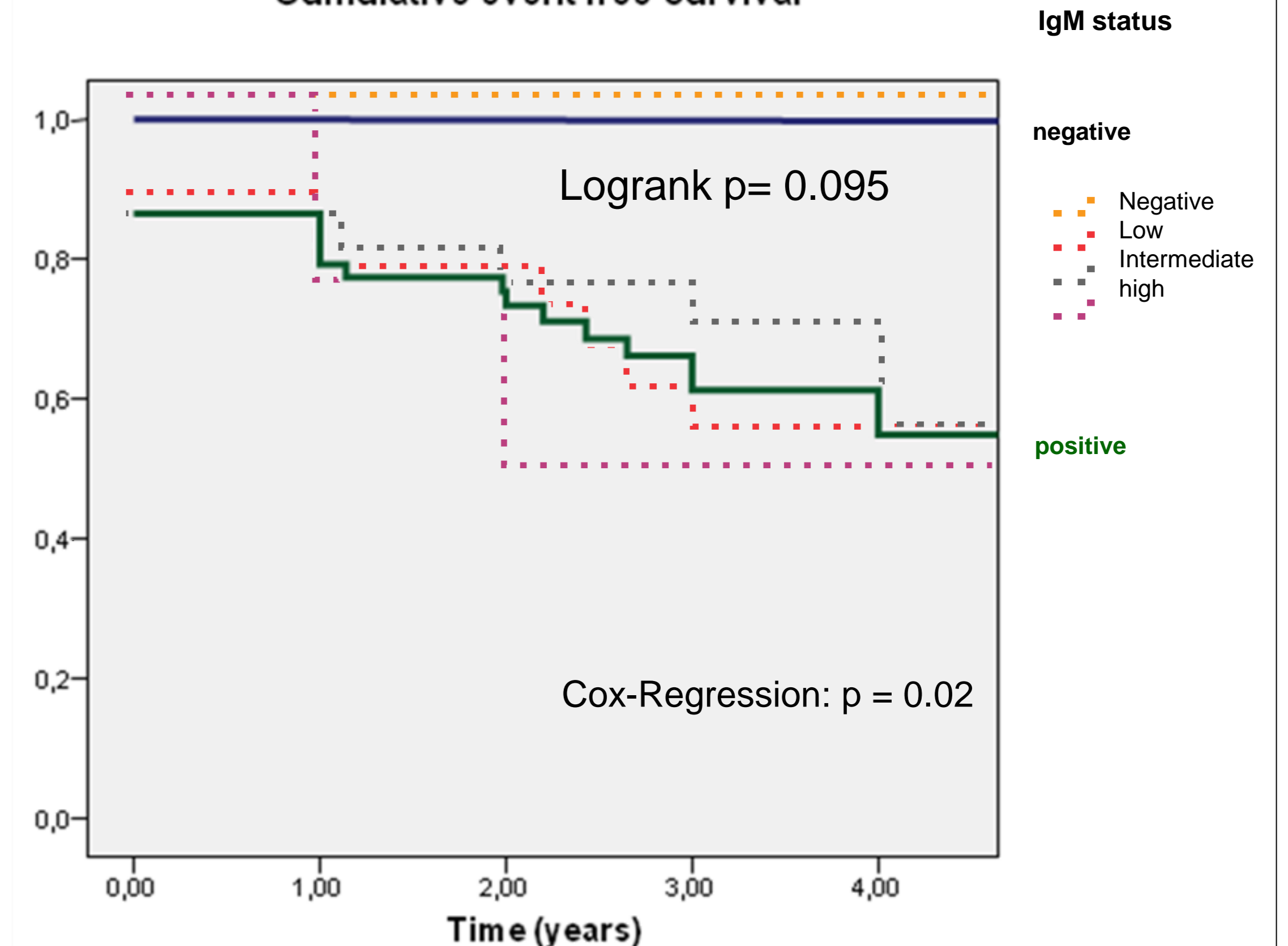
### Patients (%) classified into status of IgM



### Clinical endpoints:

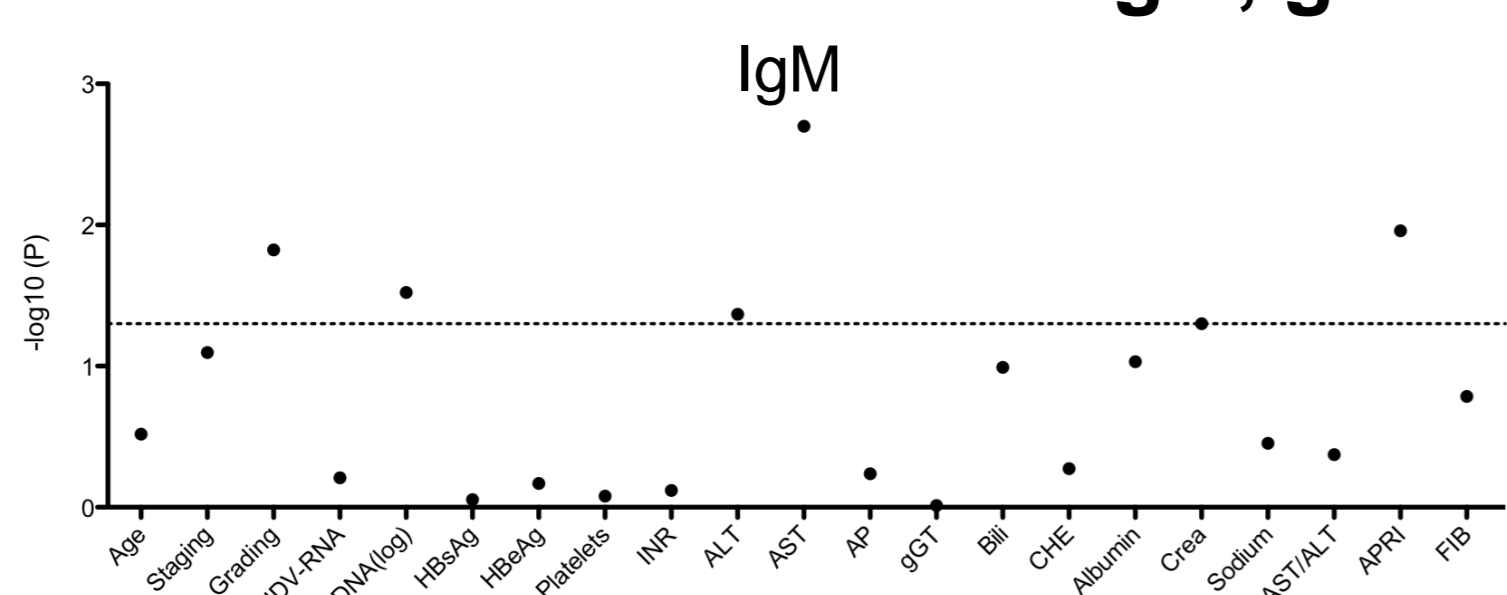
- hepatic decompensation
  - ❖ ascites
  - ❖ encephalopathy
  - ❖ variceal bleeding
- hepatocellular carcinoma
- orthotopic liver transplantation
- death

### Cumulative event free survival

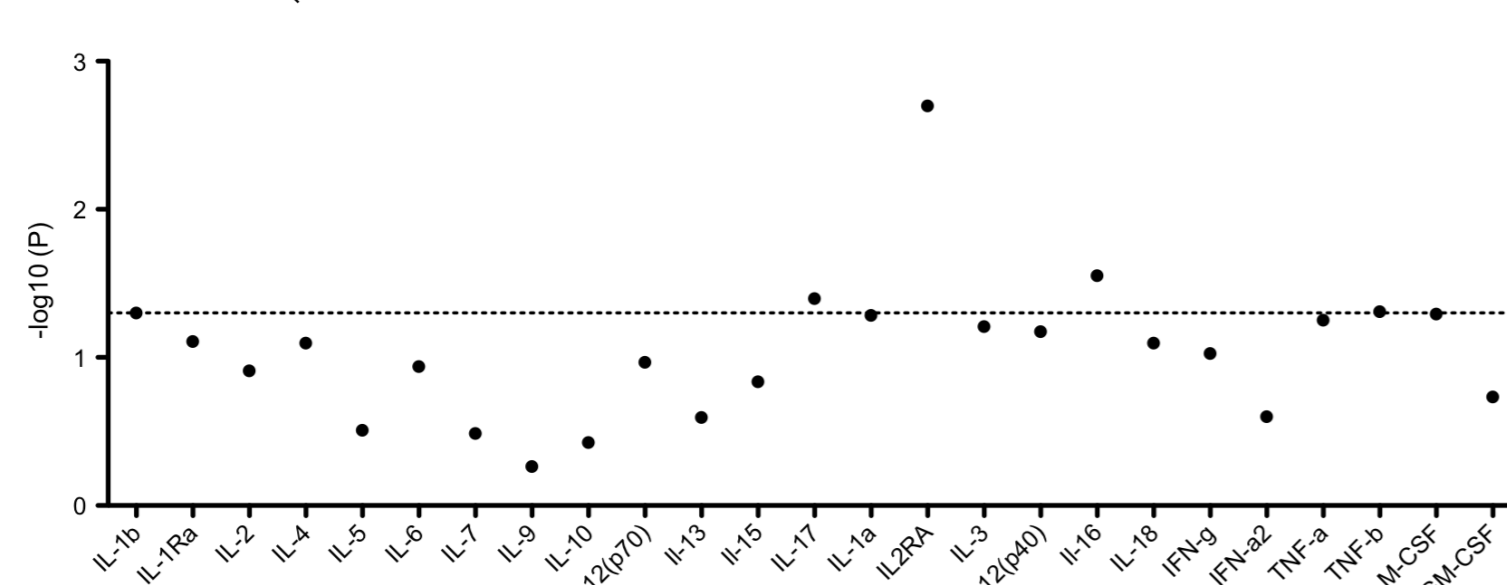


### Factors associated with IgM, grading and staging (ANOVA)

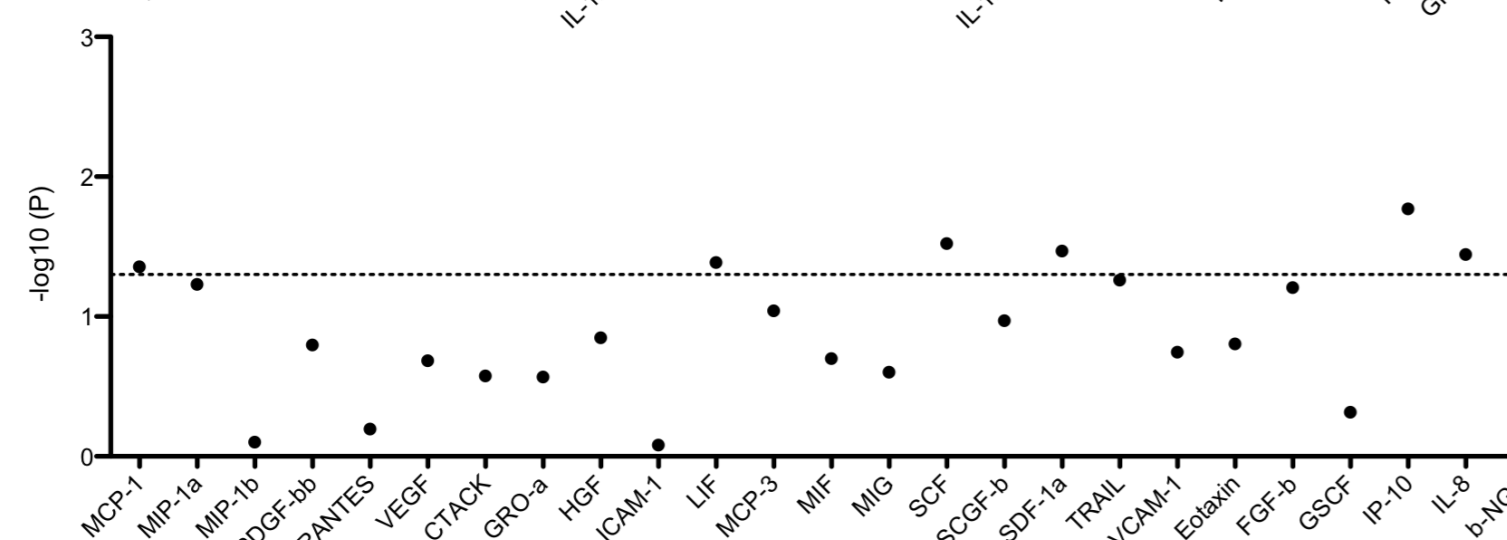
Clinical parameters



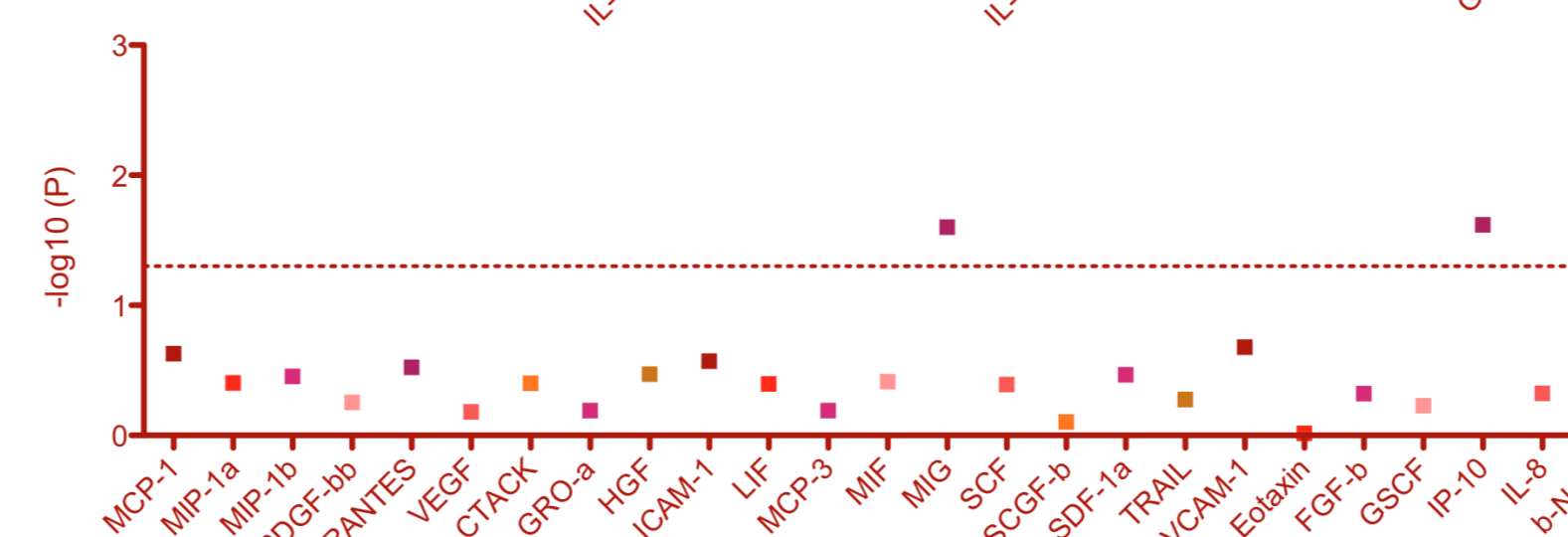
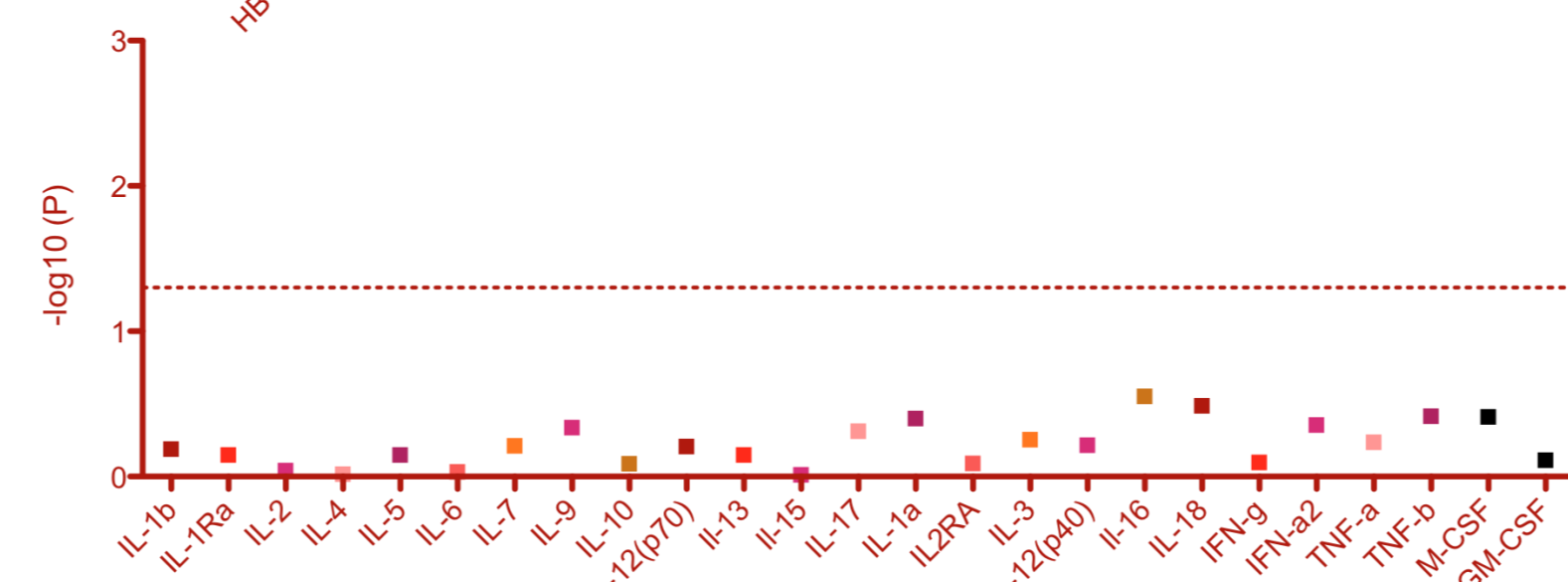
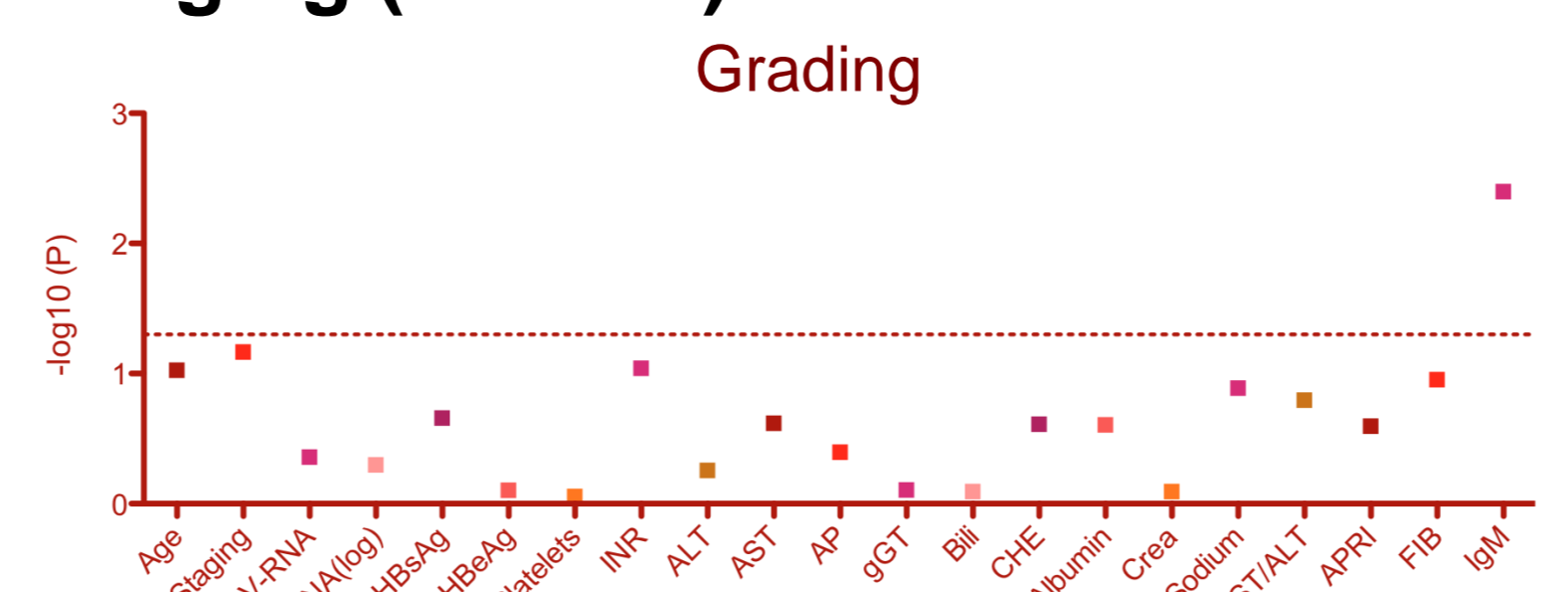
Cytokines (IL, IFN, TNF, CSF)



Cytokines/ Chemokines/ Angiogenetic factors



Grading



Staging

