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Cellular Immunity in HHV6 and/or HHV7 infected Gastrointestinal (GI) Cancer Patients

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Human Herpes Viruses 6 and 7 (HHV6 and HHV7)

- Present in patients with compromised immune system
- Are immunotropic and immunomodulating
- Can induce Fas-mediated apoptosis in lymphocytes

Target cells

- CD4+
- CD8+
- Mo/Mf
- NK

Cancer Patients Immune System Is Influenced By

- Tumor immunosuppressive factors (TGF-beta, LBIF)
- Chronic stimulation of T-cells by tumor
- Disorder of APC activity

Additional immunosuppressive factors

Insufficiency of cellular response

Contribution of tumor escape

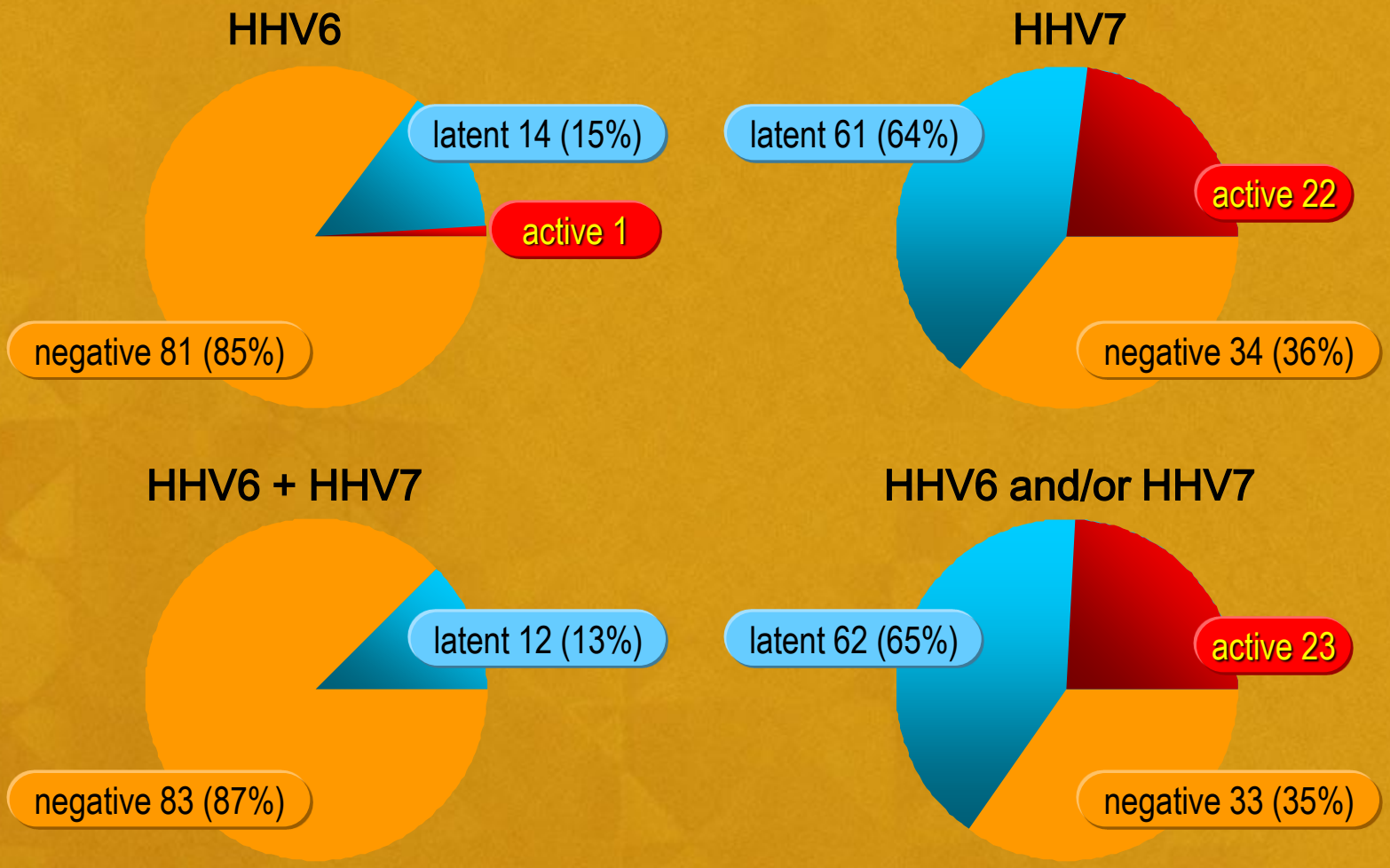
Aim of the Study

to clarify the influence of HHV6 and HHV7
on cellular immunity
in gastrointestinal (GI) cancer patients
before any treatment

Material and Methods

- GI cancer, Stage I–III 95 patients:
  - Colorectal cancer (CRC) 63
  - Gastric cancer 32
- Age range: 38–75 years
- Gender:
  - Male 45
  - Female 50
- Lymphocyte subsets CD3+, CD4+, CD8+, CD16+, CD19+, CD38+, CD25+, CD95+ were detected by laser-flow cytometer (Becton Dickenson)
- Viral sequences in DNA from PBL and plasma were detected by nPCR

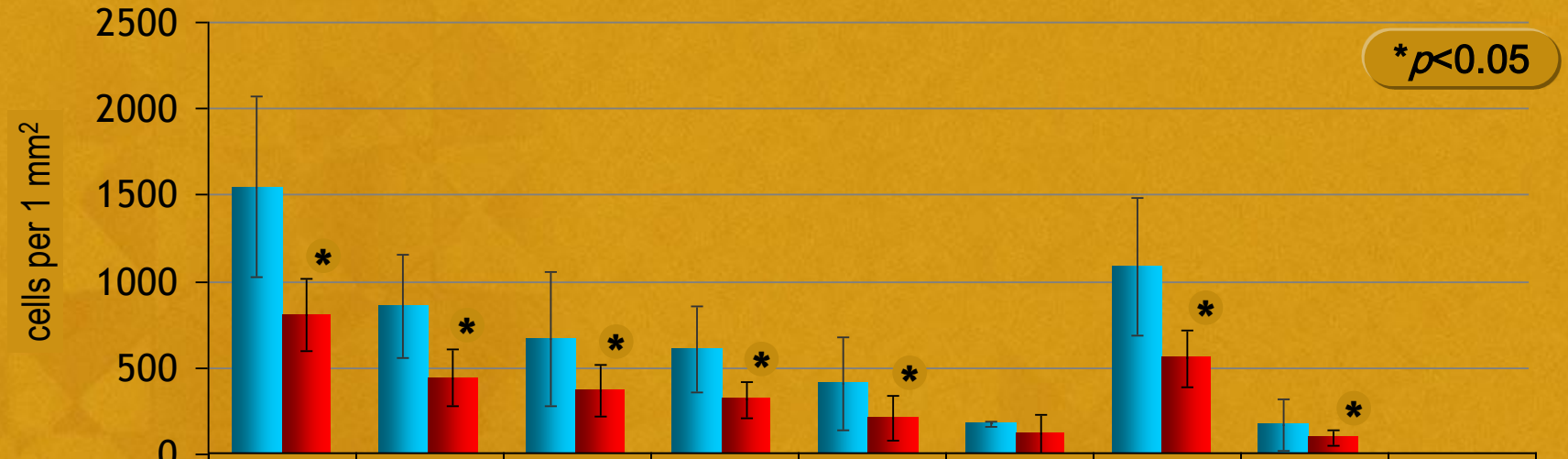
HHV6 and HHV7 in GI Cancer Patients



Average Count of Immuncompetent Cells in GI Cancer Patients in Group I and II

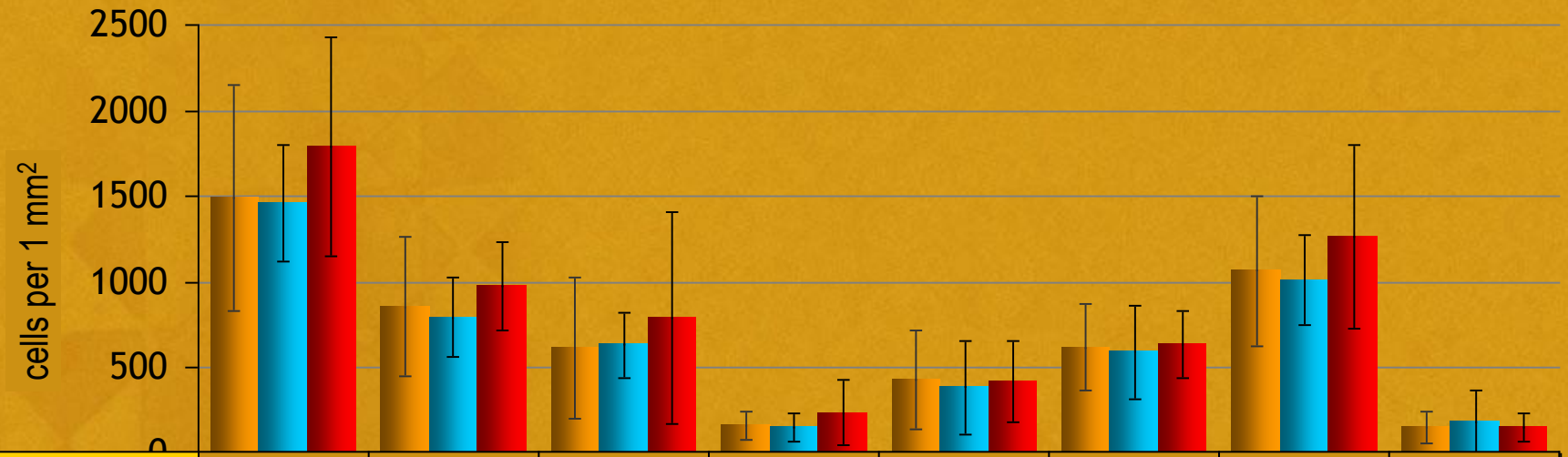
Group I (n=54): Lymphocytes ≥1400

Group II (n=41): Lymphocytes <1400



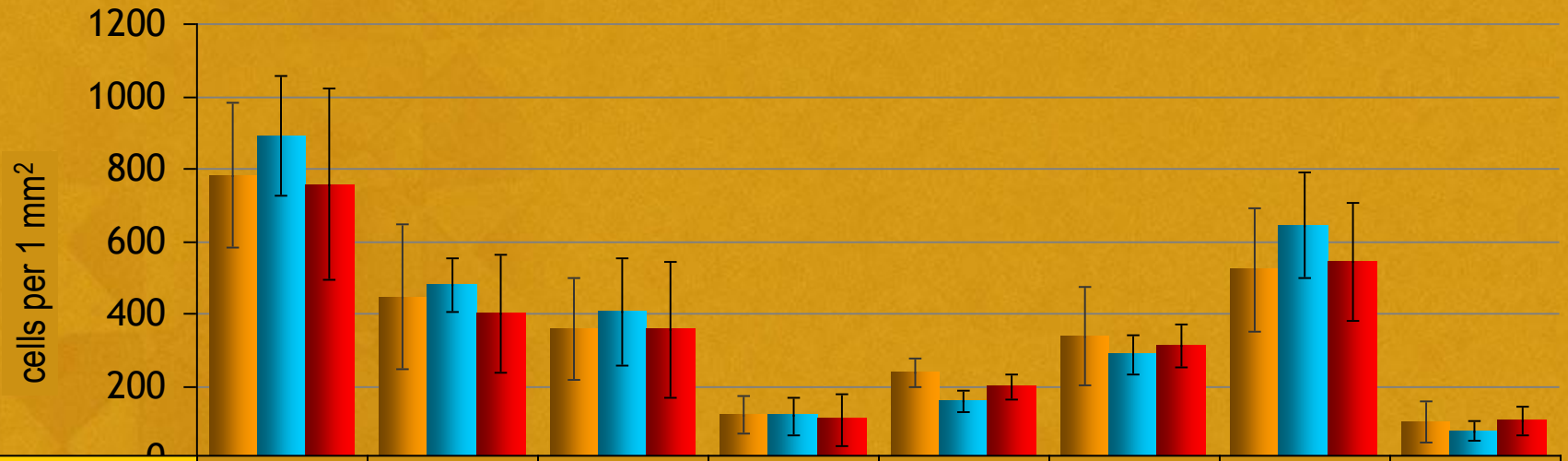
	CD3	CD4	CD8	CD38	CD16	CD19	CD95	CD25	CD4/ /CD8
Group I	1545 ±523	854 ±299	665 ±386	609 ±248	407 ±266	175 ±19	1086 ±394	170 ±146	1,3 ±0,4
Group II	802 ±209	443 ±169	369 ±151	318 ±105	209 ±129	117 ±115	556 ±165	95 ±49	1,2 ±0,3

Average Count of Immuncompetent Cells in GI Cancer Patients Group I According to HHV6/HHV7 Infection



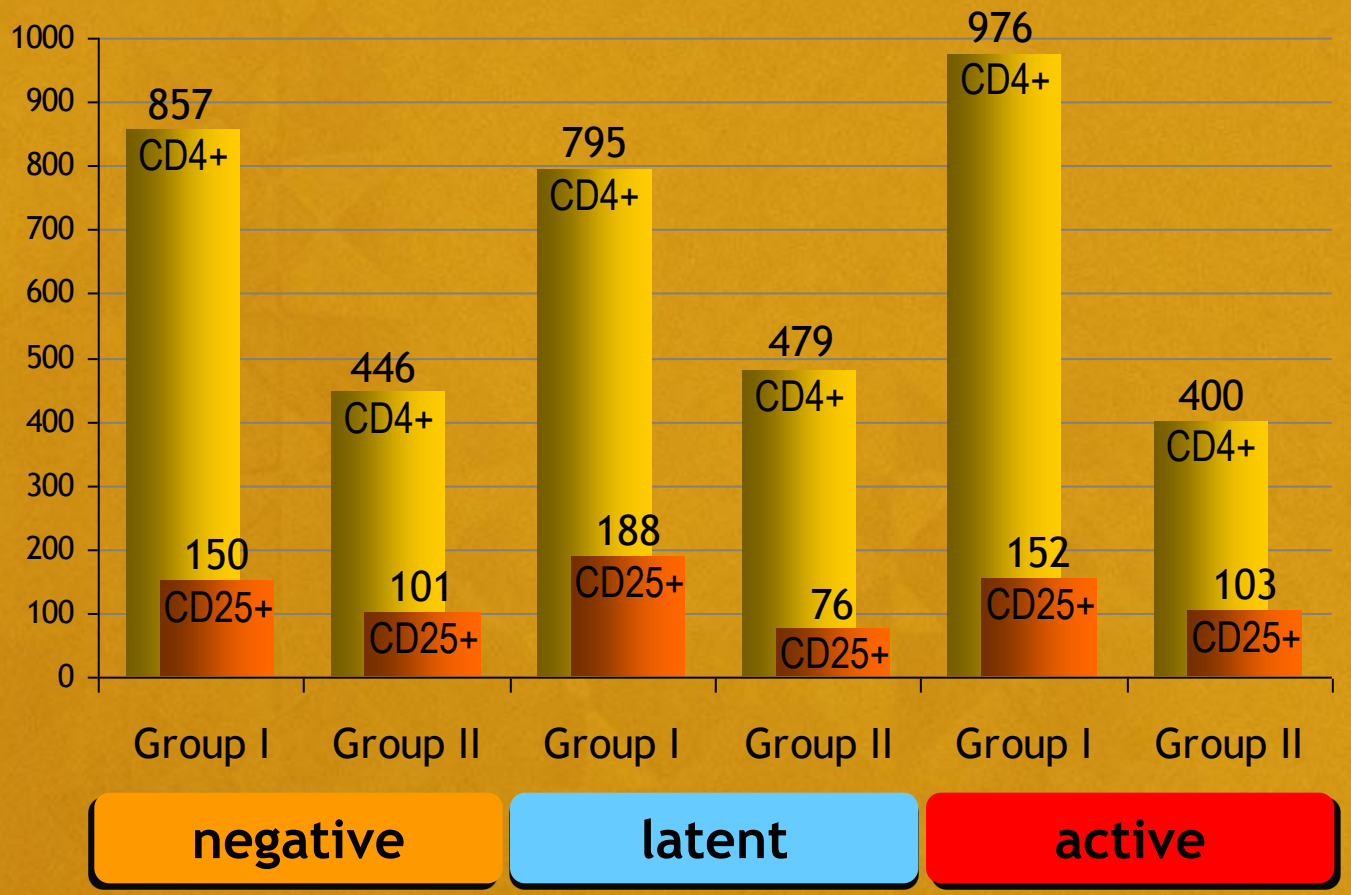
HHV6+HHV7 infection	CD3	CD4	CD8	CD19	CD16	CD38	CD95	CD25
negative	1489 ±660	857 ±407	616 ±408	164 ±83	430 ±287	618 ±252	1065 ±436	150 ±93
latent	1461 ±335	795 ±234	634 ±188	156 ±80	388 ±272	592 ±272	1013 ±259	188 ±186
active	1789 ±635	976 ±259	789 ±619	241 ±188	421 ±240	638 ±193	1267 ±535	152 ±82

Average Count of Immuncompetent Cells in GI Cancer Patients Group II According to HHV6/HHV7 Infection

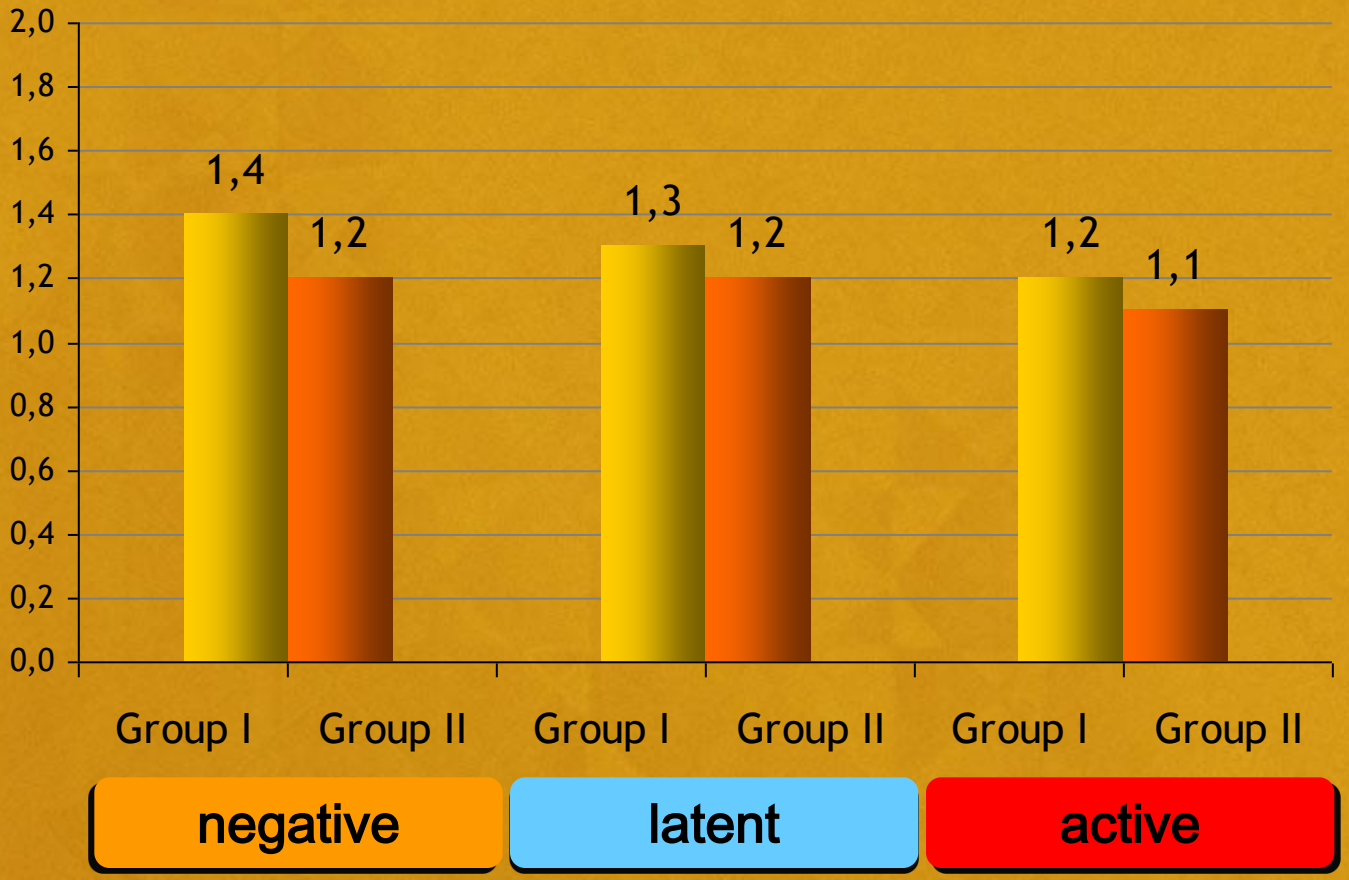


HHV6+HHV7 infection	CD3	CD4	CD8	CD19	CD16	CD38	CD95	CD25
negative	781 ±200	446 ±199	358 ±142	120 ±52	238 ±40	337 ±136	521 ±169	101 ±58
latent	890 ±166	479 ±76	404 ±147	118 ±52	159 ±31	285 ±54	644 ±145	76 ±29
active	758 ±264	400 ±164	356 ±189	107 ±71	197 ±35	312 ±58	543 ±165	103 ±38

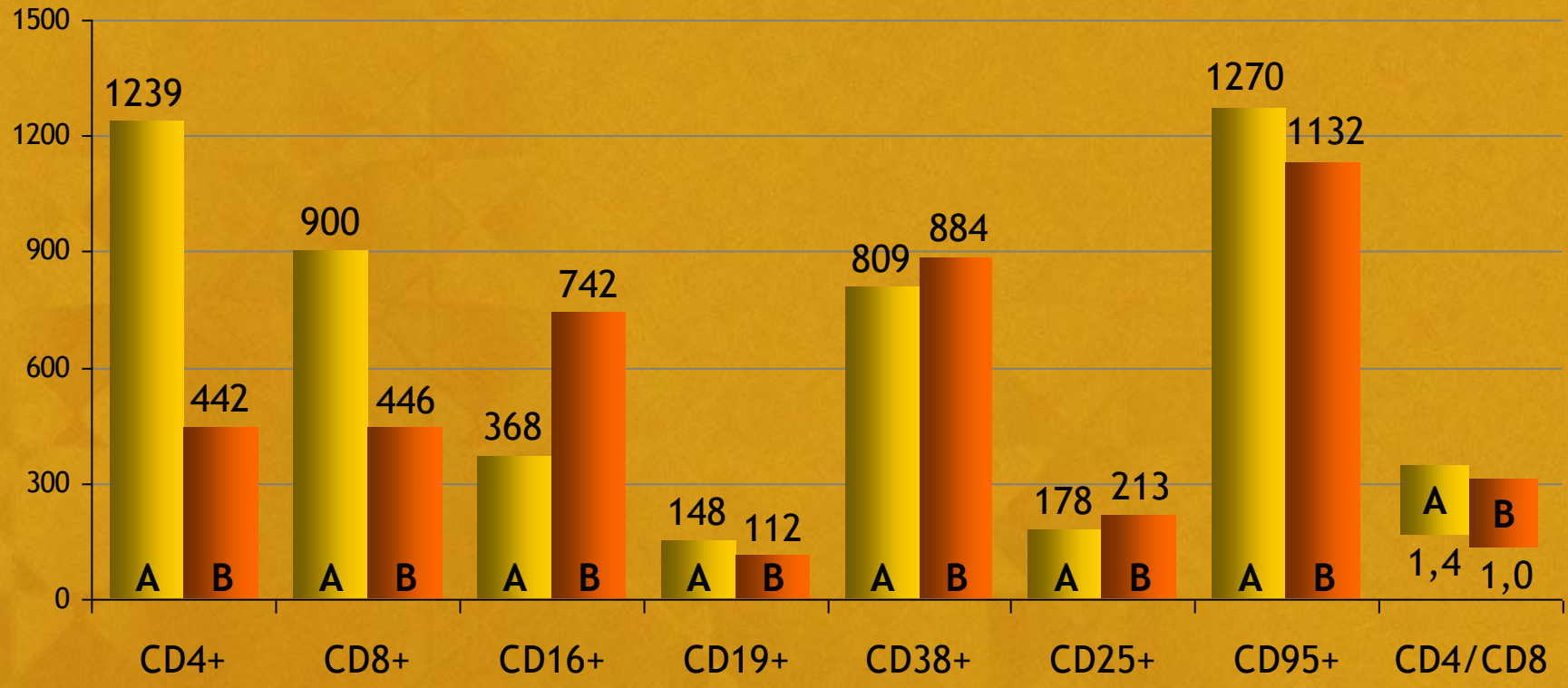
Number of CD4+ and CD25+ Cells in Immunocompetent (Group I) and Immunocompromised (Group II) GI Cancer Patients According to HHV6/HHV7 Infection



CD4+/CD8+
in Immunocompetent (Group I) and Immunocompromised (Group II) GI Cancer Patients According to HHV6/HHV7 Infection



Example: Absolute Count of Lymphocytes Among Immunocompetent GI Cancer Patients A and B



Conclusions

- 56,8% of GI cancer patients in our study are associated with a compromised immune system (lymphopenia, Grade I–III)
- 65% of examined GI ca patients had latent HHV6 or/and HHV7 infection and 37% of them had active viral infection
- Insufficiency of inductor–phase of cellular immune response as well as non–specific effector–phase was typical in patients with lymphopenia and active beta–herpes virus infection
- Average number of lymphocyte subsets in patient groups did not reflect individual immune response and intensity of cellular immune reactions in each patient

ERAF
EIROPAS REĢIONĀLĀS ATTĪSTĪBAS FONDS
IEGULDĪJUMS TAVĀ NĀKOTNĒ
EIROPAS SAVIENĪBA

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Thank you for attention!