|  |
| --- |
| **Appendix I - Correlation between suPAR and other inflammatory biomarkers** |
| **Biomarker, setting** | **Correlation** | **P value** | **Reference** |
| **CRP** |  |  |  |
|  General population (n=1,068) | *r* 0.23 | <0.001 | Botha (2014)1 |
|  General population, survivors (n=1,217) | Positive correlation | <0.001 | Botha (2015)2 |
|  General population, non-survivors (n=208) | *r* 0.30 | <0.001 | Botha (2015)2 |
|  General population (n=1,179) | *r* 0.18 | <0.0001 | Diederichsen (2018)3 |
|  General population (n=2,602) | *ρ* 0.30 | <0.0001 | Eugen-Olsen (2010)4 |
|  General population (n=830) | *r* 0.15 | <0.001 | Rasmussen (2019)5 |
|  General population (n=168) | *ρ* 0.18 (0.02–0.33) | <0.001 | Schenk (2019)6  |
|  Healthy infants (n=18)  | No correlation | 0.48 | Siahanidou (2014)7 |
|  Healthy volunteers (n=94) | *τ* 0.16 | <0.001 | Eugen-Olsen (2016)8 |
|  Acute Puumala hantavirus (n=97) | *r* 0.298 | 0.003 | Outinen (2013)9 |
|  AECOPD (n=43) | *r* 0.33 | 0.03 | Gumus (2015)10 |
|  AMU patients (n=540) | *r* 0.28 | <0.0001 | Haupt (2012)11 |
|  AMU patients (n=4,343) | 0.36 Kendall’s tau-b | <0.0001 | Rasmussen (2016)12 |
|  Cirrhosis, decompensated (n=162) | *r* 0.26 | 0.001 | Zimmermann (2013)13 |
|  Chronic hepatitis C virus (n=38) | *r* 0.36 | 0.027 | Sjöwall (2015)14 |
|  Chronic liver disease (n=159) | *r* 0.347 | <0.001 | Zimmermann (2012)15 |
|  COPD patients (n=24) | *r* 0.53 | <0.01 | Böcskei (2019)16 |
|  Crimean-Congo hemorrhagic fever (n=100) | *r* 0.519 | <0.001 | Yilmaz (2011)17 |
|  Crohn’s disease (n=22) (ΔCRP, ΔsuPAR) | *r* 0.33 | <0.05 | Lönnkvist (2011)18 |
|  CVD, carotid plaques (n=162) | *r* 0.268 | 0.001 | Edsfeldt (2012)19 |
|  CVD, STEMI (n=296) | *r* 0.39 | <0.0001 | Lyngbæk (2012)20 |
|  Diabetes (Type 1) + controls (n=667 + 51) | *r* 0.24 | <0.001 | Theilade (2015)21 |
|  DOC patients (n=179) | 0.25 Kendall’s tau-b | <0.0001 | Rasmussen (2017)22 |
|  ICU patients (n=258) | *r* 0.254 | <0.001 | Donadello (2014)23 |
|  ICU patients (n=273) | *r* 0.41 | <0.001 | Koch (2011)24 |
|  Multiple myeloma (n=46) | *r* 0.2257 | n.s. | Rigolin (2003)25 |
|  NAFLD (n=82) | No correlation | n.s. | Sjöwall (2015)14 |
|  Neonatal bacterial infections (n=19)  | *r* 0.52 | 0.02 | Siahanidou (2014)7 |
|  Neonatal viral infections (n=28)  | No correlation | 0.45 | Siahanidou (2014)7 |
|  Pediatric inflammatory bowel disease (n=37) | No correlation | n.s. | Kolho (2012)26 |
|  Pediatric pneumonia (n=227) | *r* 0.15 | <0.05 | Wrotek (2015)27 |
|  Pediatric urinary tract infection (n=42) | *r* 0.492 | <0.01 | Wittenhagen (2011)28 |
|  Psychiatric patients (MDD+SA, n=71) | *rho* 0.52 | <.001 | Ventorp (2015)29 |
|  Psychiatric patients (MDD+controls, n=34) | No correlation | n.s. | Ventorp (2017)30 |
|  Schizophrenia + controls (n=174 + 158) | *r* 0.28 | Significant | Bigseth (2021)31 |
|  End-stage renal disease, hemodialysis (n=64) | *r* 0.23 | 0.15 | Wlazeł (2018)32 |
|  Rheumatoid arthritis (n=51) | *r* 0.44 | <0.01 | Slot (1999)33 |
|  Rheumatoid arthritis (n=61) | *r* 0.32 | 0.02 | Toldi (2013)34 |
|  SLE (n=198) | *β* 0.36 | <0.0005 | Enocsson (2013)35 |
|  Sepsis (n=40) | No correlation | n.s. | Khater (2016)36 |
|  Sepsis (n=27) | *r* 0.15 | 0.53 | Gustafsson (2012)37 |
| **Endothelin-1** |  |  |  |
|  COPD patients (n=24) | *r* 0.54 | <0.01 | Böcskei (2019)16 |
| **Erythrocyte sedimentation rate (ESR)** |  |  |  |
|  AECOPD (n=43) | *r* 0.22 | 0.16 | Gumus (2015)10 |
|  DOC patients (n=191) | 0.27 Kendall’s tau-b | <0.0001 | Rasmussen (2017)22 |
|  Paediatric inflammatory bowel disease  (n=37) | *r* 0.13 | n.s. | Kolho (2012)26 |
|  Rheumatoid arthritis (n=51) | *r* 0.35 | <0.05 | Slot (1999)33 |
|  Rheumatoid arthritis (n=61) | *r* 0.30 | 0.05 | Toldi (2013)34 |
|  SLE (n=198) | *β* 0.24 | 0.002 | Enocsson (2013)35 |
| **Fibrinogen** |  |  |  |
|  General population (n=819) | *r* 0.19 | <0.001 | Rasmussen (2019)5 |
|  AECOPD (n=45) | *r* 0.715  | <0.001 | AboEl-Magd (2018)38 |
|  AECOPD (n=43) | *r* 0.59 | <0.001 | Gumus (2015)10 |
| **IL-1β** |  |  |  |
|  SLE (n=198) | *β* 0.37 | <0.0005 | Enocsson (2013)35 |
| **IL-6** |  |  |  |
|  General population, survivors (n=1,217) | Not reported | <0.001 | Botha (2015)2 |
|  General population, non-survivors (n=208) | *r* 0.39 | <0.001 | Botha (2015)2 |
|  General population (n=790) | *r* 0.08 | 0.02 | Rasmussen (2019)5 |
|  Healthy subjects (n=39) | *ρ* -0.01 | 0.97 | Ostrowski (2005)39 |
|  Acute Puumala hantavirus (n=97) | *r* 0.621 | <0.001 | Outinen (2013)9 |
|  Chronic liver disease (n=159) | *r* 0.650 | <0.001 | Zimmermann (2012)15 |
|  Cirrhosis, decompensated (n=162) | *r* -0.01 | 0.93 | Zimmermann (2013)13 |
|  COPD patients (n=24) | *r* 0.40 | 0.051 | Böcskei (2019)16 |
|  HIV (n=36) | 0.26 | 0.13 | Andersen (2008)40 |
|  SLE (n=198) | No correlation | n.s. | Enocsson (2013)35 |
|  Pregnancy (n=60) | No correlation | n.s. | Desdicioglu (2017)41 |
|  Sepsis patients (n=27) and controls (n=22) | *r* 0.04 | 0.84 | Gustafsson (2012)37 |
|  SIRS (n=50) | *r* 0.395 | 0.004 | Yu (2011)42 |
| **IL-8 (CXCL8)** |  |  |  |
|  Chronic liver disease (n=159) | *r* 0.412 | <0.001 | Zimmermann (2012)15 |
| **IL-10** |  |  |  |
|  Chronic liver disease (n=159) | *r* 0.195 | 0.027 | Zimmermann (2012)15 |
|  Cirrhosis, decompensated (n=162) | *r* 0.22 | 0.006 | Zimmermann (2013)13 |
|  SLE (n=198) | *β* 0.31 | <0.0005 | Enocsson (2013)35 |
|  Sepsis patients (n=27) and controls (n=22) | *r* 0.02 | 0.93 | Gustafsson (2012)37 |
| **IL-18** |  |  |  |
|  Haemodialysis (n=84) | *r* 0.38 | <0.001 | Almroth (2016)43 |
|  Healthy controls (n=61) | *r* 0.44 | 0.010 | Almroth (2016)43 |
|  |  |  |  |
| **LPS-binding protein** |  |  |  |
|  Cirrhosis, decompensated (n=162) | *r* 0.14 | 0.07 | Zimmermann (2013)13 |
| **MCP-1 (CCL2)** |  |  |  |
|  Chronic liver disease (n=159) | *r* 0.174 | 0.034 | Zimmermann (2012)15 |
| **Pentraxin-3** |  |  |  |
|  Acute Puumala hantavirus (n=97) | *r* 0.425 | 0.005 | Outinen (2013)9 |
| **Procalcitonin** |  |  |  |
|  Severe acute pancreatitis (n=50) | *r* 0.233 | 0.104 | Long (2019)44 |
|  ICU patients (n=273) | *r* 0.468 | <0.001 | Koch (2011)24 |
|  Pediatric pneumonia (n=227) | *r* 0.29 | <0.05 | Wrotek (2015)27 |
|  Pediatric urinary tract infection (n=14) | *r* 0.300 | n.s. | Wittenhagen (2011)28 |
|  Sepsis patients (n=27) and controls (n=22) | *r* 0.006 | 0.98 | Gustafsson (2012)37 |
|  SIRS (n=29) and sepsis (n=82) | *r* 0.326 | <0.001 | Zeng (2016)45 |
| **TNF-α** |  |  |  |
|  Chronic liver disease (n=159) | *r* 0.534 | <0.001 | Zimmermann (2012)15 |
|  Cirrhosis, decompensated (n=162) | *r* 0.03 | 0.67 | Zimmermann (2013)13 |
|  Haemodialysis (n=84) | *r* 0.29 | 0.007 | Almroth (2016)43 |
|  Healthy controls (n=61) | *r* 0.24 | 0.097 | Almroth (2016)43 |
|  Healthy subjects (n=39) | *ρ* 0.25 | 0.154 | Ostrowski (2005)39 |
|  HIV (n=36) | *r* 0.54 | <0.001 | Andersen (2008)40 |
|  ICU patients (n=273) | *r* 0.57 | <0.001 | Koch (2011)24 |
|  SIRS (n=50) | *r* 0.606 | <0.001 | Yu (2011)42 |
|  SLE (n=198) | *β* 0.34 | <0.0005 | Enocsson (2013)35 |
|  Trauma patients (n=51) | *r* 0.43 | <0.01 | Timmermans (2015)46 |
| **White blood cell (WBC) count** |  |  |  |
|  Acute Puumala hantavirus (n=97) | *r* 0.475 | <0.001 | Outinen (2013)9 |
|  AECOPD (n=43) | *r* 0.09 | 0.55 | Gumus (2015)10 |
|  AMU patients (n=539) | *r* 0.16 | <0.0001 | Haupt (2012)11 |
|  Chronic liver disease (n=159) | *r* 0.177 | 0.028 | Zimmermann (2012)15 |
|  Cirrhosis, decompensated (n=162) | *r* 0.32 | <0.001 | Zimmermann (2013)13 |
|  Crimean-Congo haemorrhagic fever  (n=100) | *r* 0.547 | <0.001 | Yilmaz (2011)17 |
|  General population (n=827) | *r* 0.22 | <0.001 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.36 Kendall’s tau-b | <0.001 | Eugen-Olsen (2016)8 |
|  Liver disease (n=159) | *r* 0.177 | 0.028 | Zimmermann (2012)15 |
|  Neonatal infections + controls (n=47 + 18)  | *r* 0.26 | 0.03 | Siahanidou (2014)7 |
|  Pediatric malaria (n=478) | *r* 0.14 | 0.005 | Ostrowski (2005)47 |
|  Pediatric pneumonia (n=227) | - | n.s. | Wrotek (2015)27 |
| **White blood cell types:** |  |  |  |
| **Basophil count** |  |  |  |
|  General population (n=827) | *r* 0.04 | 0.29 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.07 Kendall’s tau-b | n.s. | Eugen-Olsen (2016)8 |
| **Eosinophil count** |  |  |  |
|  General population (n=827) | *r* 0.05 | 0.17 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.19 Kendall’s tau-b | 0.009 | Eugen-Olsen (2016)8 |
| **Lymphocyte count** |  |  |  |
|  General population (n=827) | *r* 0.18 | <0.001 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.09 Kendall’s tau-b | n.s. | Eugen-Olsen (2016)8 |
|  Pediatric malaria (n=478) | *r* 0.07 | 0.171 | Ostrowski (2005)47 |
|  Pediatric pneumonia (n=227) | - | n.s. | Wrotek (2015)27 |
| **Monocyte count** |  |  |  |
|  General population (n=827) | *r* 0.18 | <0.001 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.19 Kendall’s tau-b | 0.009 | Eugen-Olsen (2016)8 |
| **Neutrophil count** |  |  |  |
|  General population (n=827) | *r* 0.16 | <0.001 | Rasmussen (2019)5 |
|  Healthy volunteers (n=94) | 0.38 Kendall’s tau-b | <0.001 | Eugen-Olsen (2016)8 |
|  Chronic liver disease (n=159) | *r* 0.311 | <0.001 | Zimmermann (2012)15 |
|  Paediatric pneumonia (n=227) | No correlation | n.s. | Wrotek (2015)27 |
| **Note:** This overview is not exhaustive.Abbreviations: AECOPD, acute exacerbations of chronic obstructive pulmonary disease; AMU, Acute Medical Unit; COPD, chronic obstructive pulmonary disease; CRP, C-reactive protein; CVD, cardiovascular disease; DOC, Diagnostic Outpatient Clinic; HIV, human immunodeficiency virus; ICU, intensive care unit; IL, interleukin; LPS, lipopolysaccharide; MCP-1, monocyte chemoattractant protein-1; MDD, major depressive disorder; n.s., not significant; NAFLD, non-alcoholic fatty liver disease; SA, suicide attempt; SIRS, systemic inflammatory response syndrome; SLE, systemic lupus erythematosus; STEMI, ST-segment elevation myocardial infarction; suPAR, soluble urokinase plasminogen activator receptor; TNF, tumor necrosis factor. |

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