# SUPPLEMENTAL MATERIAL

**Table S1. Descriptive analysis of coronary artery atherosclerosis and immune cells in the perivascular adipose tissue.**

| Variables | Mean (SD) or n (%) |
|---|---|
| **Proximal fragment** | |
| . Percentage of arterial obstruction | 56.7 (26.0) |
| . Unstable Atherosclerotic plaques | 41 (16.7%) |
| . Density of macrophages ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 2.44 (1.31; 4.33) |
| . Density of T-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0.619 (0.301; 1.07) |
| . Density of B-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0.02 (0; 0.07) |
| **Distal fragment** | |
| . Percentage of arterial obstruction | 17.3 (10.3) |
| . Unstable Atherosclerotic plaques | 0 (0%) |
| . Density of macrophages ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 2.34 (0.99; 4.39) |
| . Density of T-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0.601 (0.380.4; 1.12) |
| . Density of B-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0.02 (0; 0.05) |
| **Difference proximal and distal fragment** | |
| . Density of macrophages ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0.07 (-1.08; 1.10) |
| . Density of T-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | -0.03 (-0.35; 0.40) |
| . Density of B-lymphocytes ($10^{-5}$ cells/$\mu m^2$), median (IQR) | 0 (-0.02; 0.03) |

**Table S2. Association of density of CD68$^{+}$ macrophages in the PvAT with sociodemographic and clinical data (n=246).**

| Density of CD68$^{+}$ macrophages ($10^{-5}$ cells/µm$^2$) | β | 95% CI | p$^{\dagger}$ |
|---|---|---|---|
| **Age (years), mean (SD)** | 0.052 | 0.017; 0.088 | 0.004 |
| **Female, n (%)** | 0.492 | -0.581; 1.564 | 0.36 |
| **White, n (%)** | 0.240 | -0.868; 1.349 | 0.66 |
| **Education (years), median (IQR)** | -0.072 | -0.194; 0.049 | 0.23 |
| **Hypertension, n (%)** | -0.578 | -1.954; 0.796 | 0.40 |
| **Diabetes, n (%)** | -0.389 | -1.428; 0.649 | 0.45 |
| **CAD symptoms, n (%)** | -0.461 | -1.891; 0.968 | 0.52 |
| **Cardiac failure, n (%)** | -0.298 | -1.341; 0.746 | 0.57 |
| **Stroke, n (%)** | 0.271 | -1.029; 1.571 | 0.67 |
| **Dyslipidemia, n (%)** | -0.286 | -1.622; 1.051 | 0.67 |
| **BMI, mean (SD)** | -0.140 | -0.254; -0.027 | 0.01 |
| **Physical inactivity, n (%)** | 0.524 | -0.627; 1.675 | 0.36 |
| **Current smoking, n (%)** | 0.951 | -1.017; 2.920 | 0.33 |
| **Current alcohol use, n (%)** | -0.414 | -1.542; 0.714 | 0.46 |

$^{\dagger}$Linear regression with robust standard errors to account for repeated measures in the same individual

**Table S3. Association of density of $CD3^+$ T-lymphocytes in the PvAT with sociodemographic and clinical data (n=246).**

| Density of $CD3^+$ T-lymphocytes ($10^{-5}$ cells/$\mu m^2$) | β | 95% CI | p† |
|---|---|---|---|
| **Age (years), mean (SD)** | 0.004 | -0.004; 0.013 | 0.30 |
| **Female, n (%)** | 0.004 | -0.281; 0.289 | 0.97 |
| **White, n (%)** | -0.156 | -0.459; 0.147 | 0.30 |
| **Education (years), median (IQR)** | -0.025 | -0.059; 0.007 | 0.12 |
| **Hypertension, n (%)** | -0.162 | -0.569; 0.245 | 0.43 |
| **Diabetes, n (%)** | -0.034 | -0.324; 0.255 | 0.81 |
| **CAD symptoms, n (%)** | 0.029 | -0.300; 0.359 | 0.86 |
| **Cardiac failure, n (%)** | 0.078 | -0.285; 0.441 | 0.67 |
| **Stroke, n (%)** | 0.488 | -0.155; 1.131 | 0.13 |
| **Dyslipidemia, n (%)** | -0.200 | -0.455; 0.054 | 0.12 |
| **BMI, mean (SD)** | -0.014 | -0.034; .008 | 0.22 |
| **Physical inactivity, n (%)** | 0.246 | 0.0007; 0.492 | 0.049 |
| **Current smoking, n (%)** | 0.212 | -0.208; 0.632 | 0.31 |
| **Current alcohol use, n (%)** | -0.054 | -0.312; 0.203 | 0.67 |

†Linear regression with robust standard errors to account for repeated measures in the same individual

**Table S4. Association of density of $CD20^+$ B-lymphocytes in the PvAT with sociodemographic and clinical data (n=246).**

| Density of $CD20^+$ B-lymphocytes ($10^{-5}$ cells/$\mu m^2$) | β | 95% CI | p† |
|---|---|---|---|
| **Age (years), mean (SD)** | 0.0004 | -0.0005; 0.001 | 0.35 |
| **Female, n (%)** | 0.005 | -0.021; 0.031 | 0.69 |
| **White, n (%)** | -0.020 | -0.047; 0.007 | 0.20 |
| **Education (years), median (IQR)** | 0.002 | -0.001; 0.005 | 0.20 |
| **Hypertension, n (%)** | 0.013 | -0.018; 0.045 | 0.40 |
| **Diabetes, n (%)** | -0.019 | -0.044; 0.005 | 0.11 |
| **CAD symptoms, n (%)** | -0.017 | -0.059; 0.025 | 0.43 |
| **Cardiac failure, n (%)** | -0.013 | -0.035; 0.009 | 0.23 |
| **Stroke, n (%)** | -0.010 | -0.033; 0.013 | 0.40 |
| **Dyslipidemia, n (%)** | 0.018 | -0.017; 0.052 | 0.31 |
| **BMI, mean (SD)** | -0.002 | -0.004; 0.0002 | 0.07 |
| **Physical inactivity, n (%)** | 0.012 | -0.017; 0.040 | 0.41 |
| **Current smoking, n (%)** | 0.036 | -0.012; 0.084 | 0.13 |
| **Current alcohol use, n (%)** | 0.014 | -0.015; 0.045 | 0.33 |

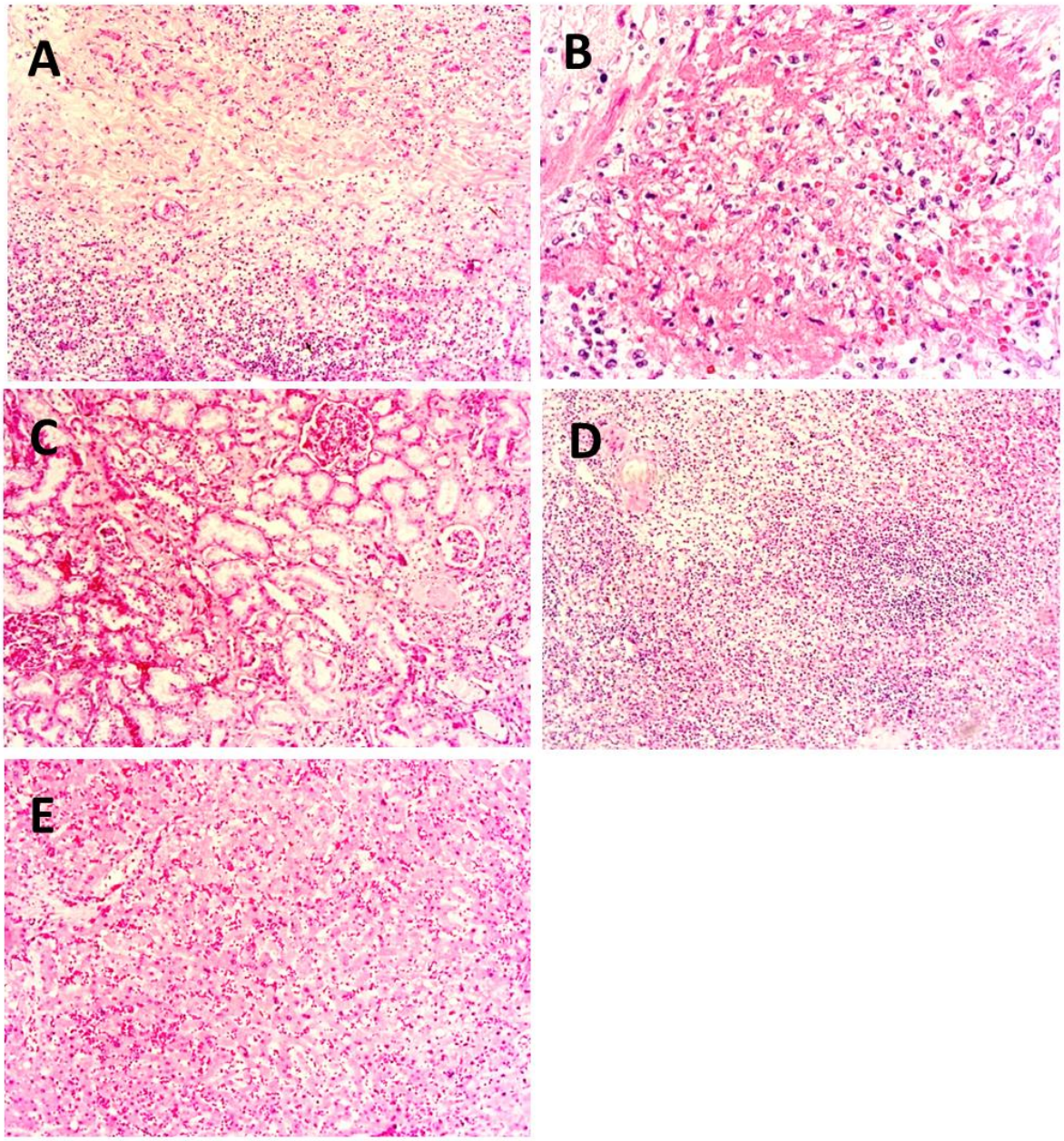
†Linear regression with robust standard errors to account for repeated measures in the same individual

**Table S5 Comparison of immune cells between perivascular adipose tissue of unstable atherosclerosis and perivascular adipose tissue of stable atherosclerosis in the same individual (n=26 matched pairs).**

| The density of immune cells ($10^{-5}$ cells/um$^2$) | Perivascular adipose tissue of unstable atherosclerosis | Perivascular adipose tissue of stable atherosclerosis | p¤ |
|---|---|---|---|
| . *$CD68^+$ macrophages* | 2.94 (1.93; 6.85) | 3.09 (0.97; 4.33) | 0.008 |
| . *$CD3^+$ T-lymphocytes* | 0.70 (0.28; 1.29) | 0.54 (0.42; 1.11) | 0.19 |
| . *$CD20^+$ T-lymphocytes* | 0.07 (0.02; 0.01) | 0.035 (0.02; 0.07) | 0.58 |

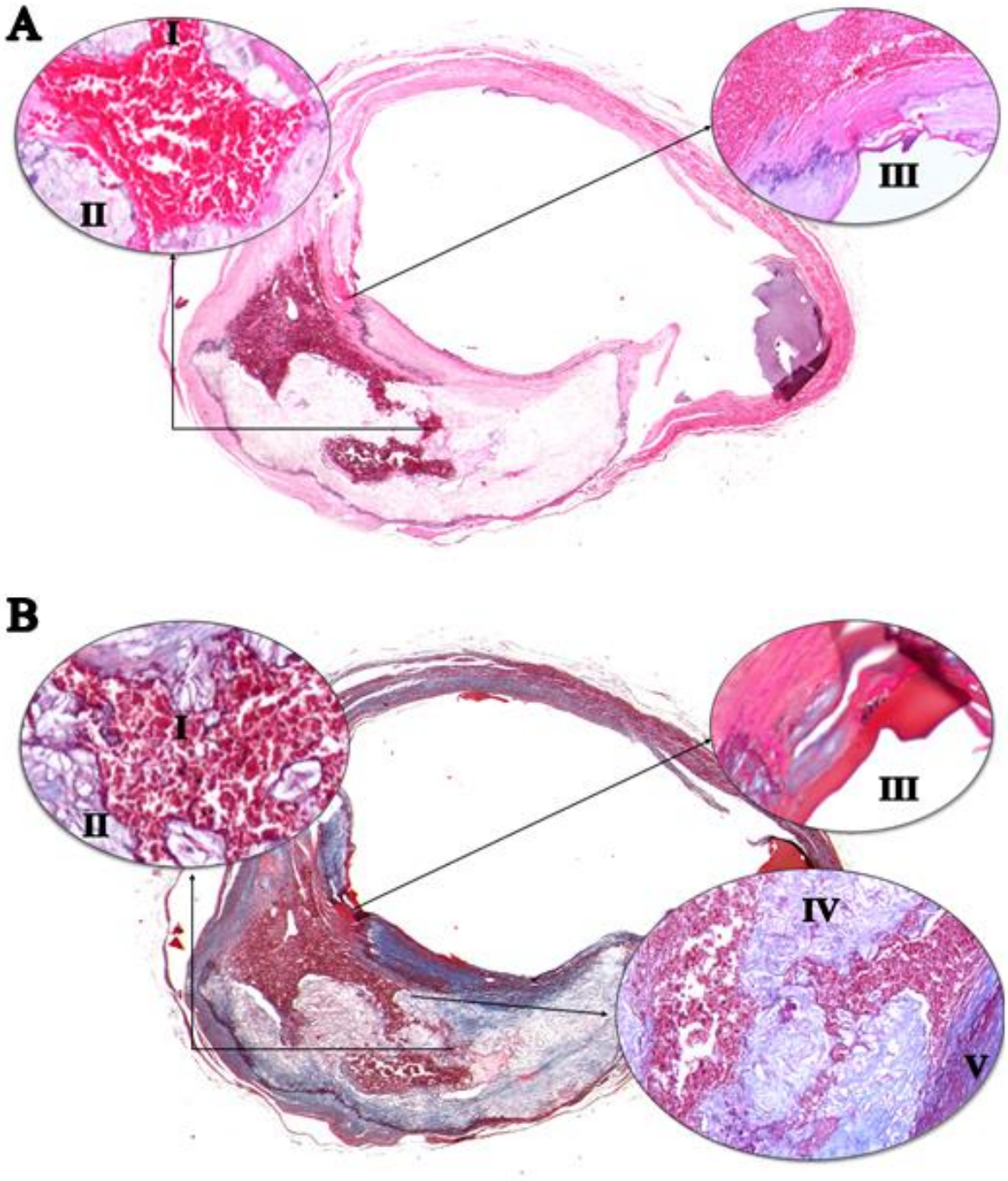
¤ Wilcoxon matched pairs signed rank test

**Figure S1. Signs of sepsis detected during the anatomopathological post-mortem exam.**



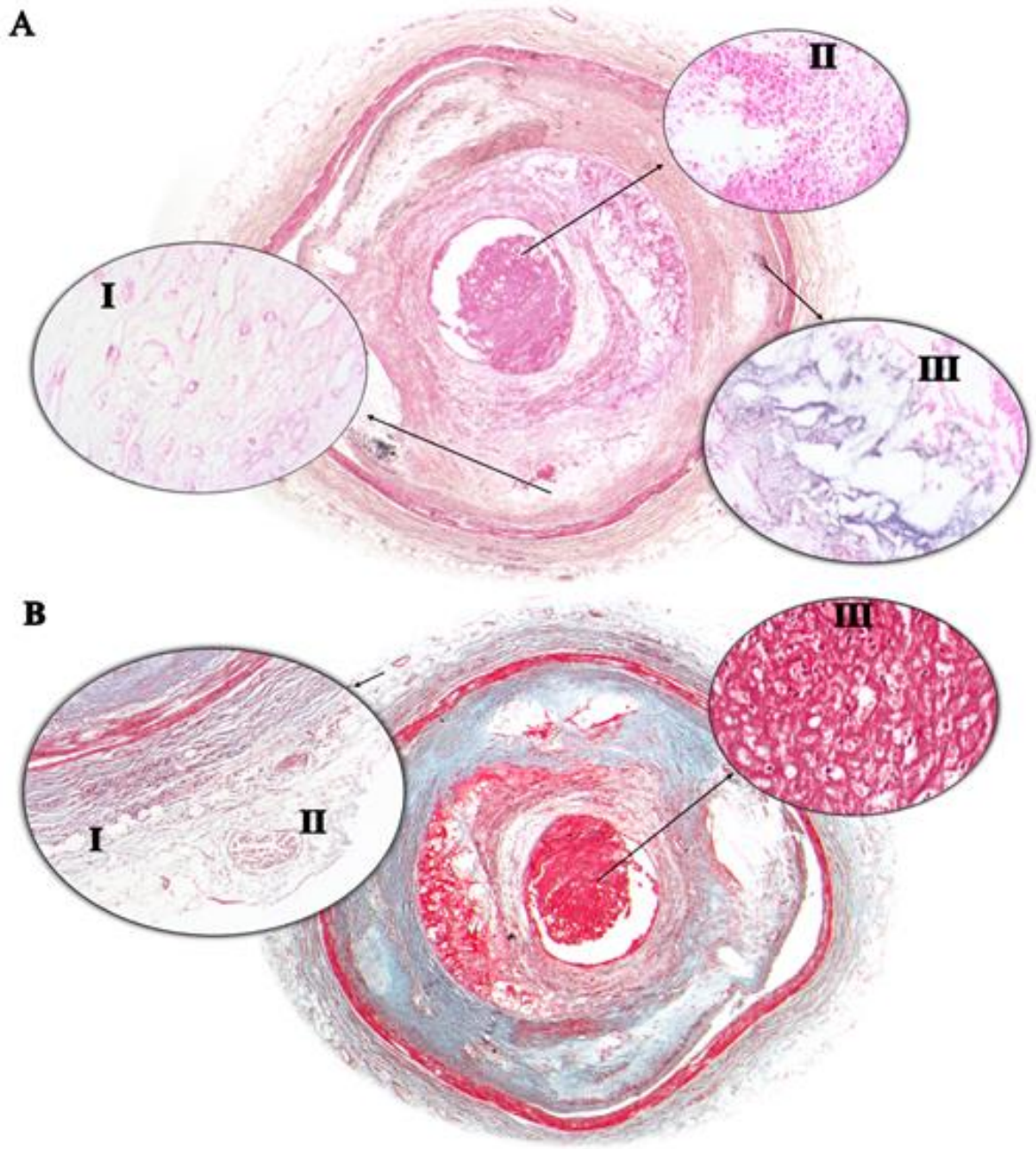

A: microscopic photograph (10x magnification) of lung with neutrophil infiltration due to bronchopneumonia. B: microscopic photograph (40x magnification) of neutrophil infiltrate in the lung. C: microscopic photograph (40x magnification) acute tubular necrosis responsive to shock in the kidney; D: microscopic photograph (10x magnification) of acute splenitis; E: microscopic photograph (10x magnification) of hepatic congestion and steatosis secondary to bronchopneumonia.

**Figure S2. Coronary artery with intraplaque hemorrhage.**



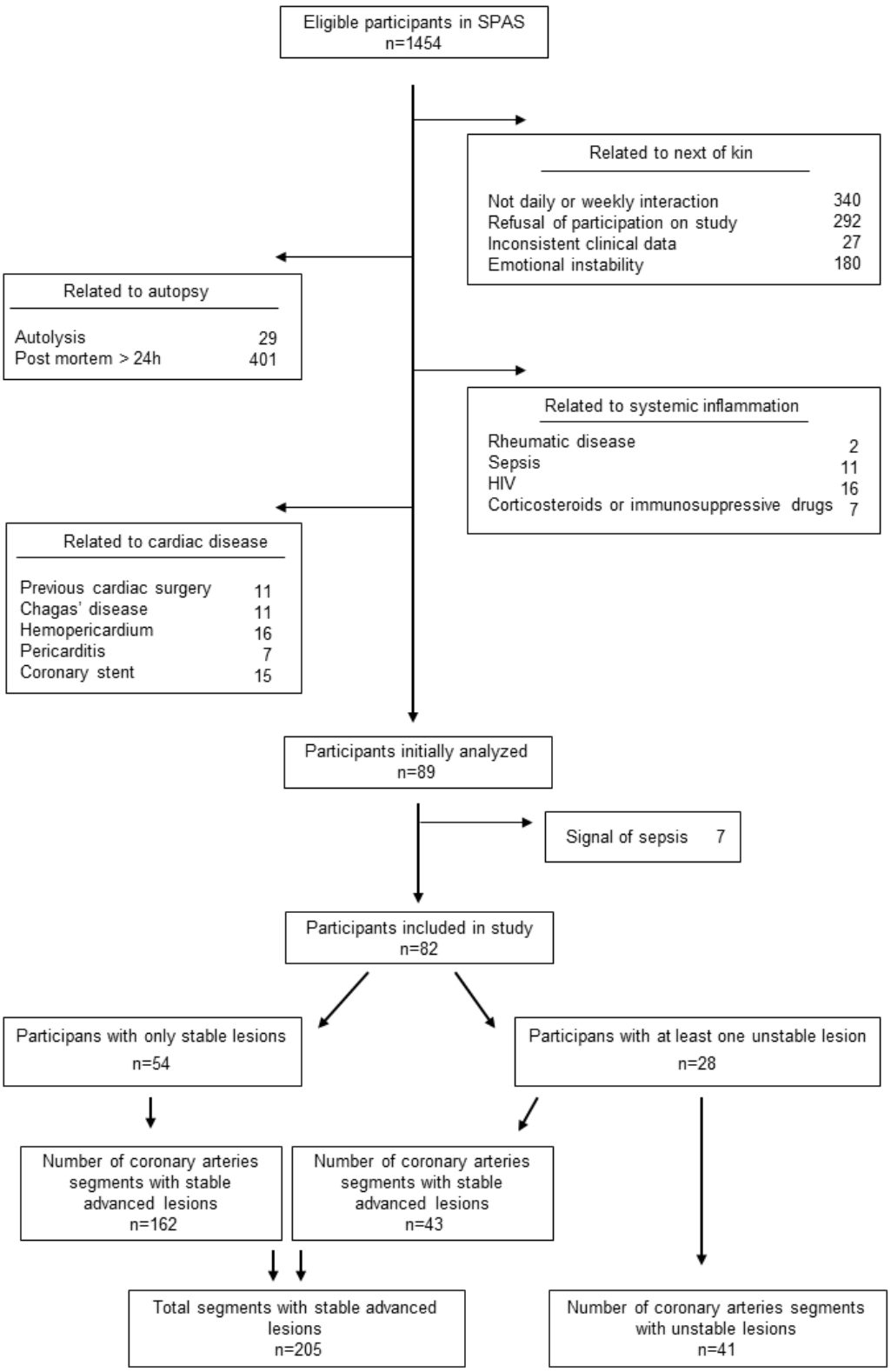

A. Coronary artery fragment stained with haematoxylin-eosin (2x of magnification). I: erythrocytes (40x of magnification); II: lipid core (40x of magnification); III: narrowing of the fibrous cap adjacent to the intraplaque hemorrhage (40x of magnification). B. Coronary artery fragment stained with Masson's trichrome (2x of magnification). I: erythrocytes (40x of magnification); II: lipid core (40x of magnification); III: narrowing of fibrous cap adjacent to intraplaque hemorrhage (40x of magnification); IV: lipid core and intraplaque hemorrhage (10x of magnification) and V: fibroses (10x of magnification).

**Figure S3. Coronary artery with thrombus.**



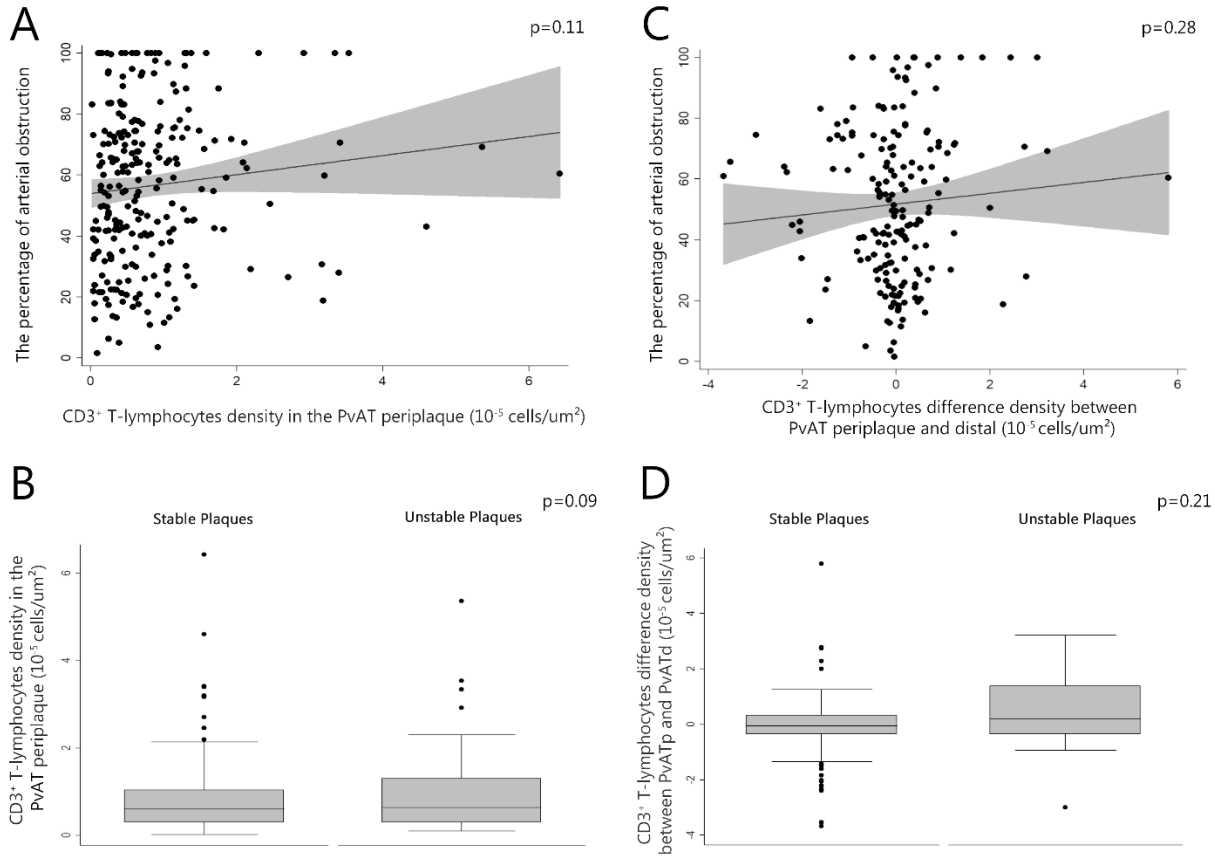

A. Coronary artery fragment stained with haematoxylin-eosin (2x of magnification). I: lipid core (40x of magnification); II: erythrocytes inside the thrombus (40x of magnification); III: calcification (40x of magnification). B. Coronary artery fragment stained with Masson's trichrome (2x of magnification). I: Periplaque perivascular adipose tissue near the adventitia layer (10x of magnification); II: *vasa vasorum* (10x of magnification); III: thrombus (40x of magnification).

**Figure S4. Flowchart of study participants.**




SPAS: São Paulo Autopsy Service. HIV: Human Immunodeficiency Virus.

**Figure S5. Association between CD3$^+$ T-lymphocytes and atherosclerosis.**




PvATp: periplaque perivascular adipose tissue; PvATd: distal perivascular adipose tissue. A: Scatter plot of the density of CD3$^+$ T-lymphocytes in periplaque PvAT with the percentage of coronary artery obstruction. B: Box plot graph of the density of CD3$^+$ T-lymphocytes in periplaque PvAT by stable and unstable plaque groups. C: Scatter plot of the difference of the CD3$^+$ T-lymphocytes density in periplaque PvAT and distal PvAT with the percentage of coronary artery obstruction. D: Box plot graph of the difference density of CD3$^+$ T-lymphocytes between periplaque PvAT and distal PvAT by stable and unstable plaque groups. PvATp: periplaque perivascular adipose tissue; PvATd: distal perivascular adipose tissue.