

Pengaruh tidak/stop merokok disertai olahraga teratur, dan atau pengaruh kerja fisik terhadap daya survival penduduk di Jakarta: penelitian kohort selama 13 tahun

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Abstrak

Objektif : Penyakit Kardiovaskular berawal dari fungsi endotel pembuluh darah yang terganggu, berlanjut menjadi proses aterosklerosis. Mencegah proses aterosklerosis dengan membiasakan tidak merokok/stop merokok disertai olahraga teratur dan/atau pengaruh kerja fisik (trias SOK) adalah upaya preventif pada tingkat endotel. Untuk mengetahui pengaruh trias SOK terhadap daya survival, dilakukan penelitian kohort.

Metode: Pada tanggal 1 Juli 200 dilakukan penelitian kohort historis terhadap sampel MONICA 1988 di tiga kecamatan Jakarta Selatan, serta diikuti sampai 31 Agustus 2001. Sampel dibagi menjadi kelompok trias SOK dan tanpa trias SOK. Dilakukan wawancara, pemeriksaan fisik, gula darah dan kolesterol total serta perekaman EKG pada sampel yang hidup, otopsi verbal pada yang menyaksikan untuk mencari sebab kematian. Aktivitas fisik (kerja fisik dan olahraga perminggu) dikelompokkan pada: tidak ada, ringan hampir setiap hari, sedang dan berat minimal 20 menit dua kali atau lebih. Merokok bila tetap merokok, mantan perokok bila telah berhenti 2 tahun atau lebih, tidak merokok bila tetap tidak merokok atau telah berhenti 10 tahun atau lebih. Kriteria hipertensi (JNC-VI), diabetes (gula darah puasa 140 mg/dl atau sewaktu 200 mg/dl), obesitas (IMT $\geq 29,99$ kg/m²), EKG memakai kode Minnesota. Analisis statistik memakai suain (adjusted) regresi Cox, 95% interval kepercayaan, Kaplan Meier (daya survival), Log rank (rasio hazard/HR), uji kappa (degree of agreement), Batas kemaknaan $p < 0,05$.

Hasil: Terdapat 479 (23,4%) sampel dari 2073 orang, umur 25-64 tahun (1988), terdiri dari 209 (43,6%) lelaki, 270 (56,4%) perempuan. Insiden kardiovaskular 1,2% pertahun, dengan proporsi kematian tertinggi penyakit jantung 42,9%. Sampel yang mengikuti this SOK mempunyai daya survival lebih baik (95,7%) dibanding tanpa trias SOK (81,1%), dan rasio kematian seperlima kali [rasio hazard (HR.) suaian = 0,20, 95% interval kepercayaan (III) = 0,08-0,57, $p=0,002$]. Faktor risiko yang dapat dimodifikasi dan rasio kematian tinggi adalah: merokok (HR=4,99, IK 2,56-9,73, $p=0,000$) dibanding tidak merokok; hipertensi tingkat-3 (HR 5,96, IK 2,69-13,21, $p=0,000$) dibanding tensi normal; diabetes (HR 2,74, IK 1,37-5,47, $p=0,004$) dibanding normal. Sedangkan yang tidak dapat dimodifikasi: umur 60 tahun (HR 10,13, IK 4,79-21,43, $p=0,000$) dibanding umur 25-49 tahun. Sedangkan aktivitas fisik mingguan mempunyai rasio kematian rendah/ringan HR=0,45, (IK 0,27-0,76, $p=0,003$), sedang HR=0,32, (IK 0,15-0,70, $p=0,004$) dan berat nol dibanding yang tidak ada aktivitas. Dihasilkan Skor Kardiovaskular Jakarta, Skor -7 sampai 1 risiko rendah ($<10\%$), skor 2 sampai 4 sedang (10-20%), skor ≥ 5 risiko tinggi ($>20\%$), sensitivitas 77,9%, spesifitas 90,0%, kappa 0,652, DOA 82,67%, $p=0,000$.

Kesimpulan: Salah satu upaya pencegahan penyakit kardiovaskular melalui upaya tidak/stop merokok, dikombinasikan dengan olahraga teratur dan/atau kerja fisik merupakan cara tepat untuk meningkatkan daya survival. Dihasilkan Skor Kardiovaskular Jakarta untuk memperkirakan kematian kardiovaskular di

masyarakat.

The Influence of Stop/Quit Smoking, Combine with Sport and or Physical Activity on Survival of the Population at Jakarta: a Cohort Study in 13 Years
Objective: Endothelial dysfunction as the beginning of atherosclerotic process in arterial vessel due to various risk factors. Prevention of atherosclerotic process in the endothelial level through quit or stop smoking, combine with regular physical activity and or sport (Trias SOK-Stop/no Smoking, Olahraga teratur/sport or Kerja fisik/physical activity) as a simple method in the community. To know the influence of trias SOK on survival of the population, a community survey was done in three districts of Jakarta.

Methods: A historical cohort study was done on the subpopulation of MONICA Jakarta 1988 using population survey since July 1, 2000 in three districts of South Jakarta until 31 of August 2001. Multistage stratified cluster sampling was done on 523.000 people, and 2073 total samples were included in 1988 study and 479 samples perform second survey. Sample was divided into exposed group (without trias SOK) and non-exposed (trias SOK). A complete history on daily habit, cardiovascular risk factors, laboratory examination and 12 leads ECG was carried. Physical activity as well as sport in one week also divided into: no physical activity, light physical activity almost every day, moderate physical activity and heavy physical activity at least 20 minutes or more. ECG criteria using Minnesota code, hypertension (INC-VI), diabetic (fasting blood sugar 140 mg/dl or occasional > 200 mg/dl), obesity (BMI > 29,99 kg/m²). Verbal autopsy was carried out to diagnose the cause of mortality. Statistical analysis using SPSS for Window 10 and Stata 6. Kaplan Meier to compare survival rate between trias SOK and non-trias SOK, log rank to measure hazard ratio, kappa test for degree of agreement and $p < 0,05$ as statistical significance.

Results: They were 479 (23.4%) samples out of 2073, 209 (43.6%) males and 270 (56.4%) females, aged 25-64 years in 1988 and 37-77 years in 2000. Cardiovascular incidence 1.2% per year, and case fatality rate of 42.9% due to heart disease. Trias SOK survival rate was higher (95.7%) compared with non-trias SOK (81.1%), and hazard ratio 1/5 [HR= 0.20, 95% CI 0.008-0.57, $p < 0.002$]. Multivariate analysis using Cox regression revealed the significant modifiable risk factors were: smoking HR 4.99 (CI 2.56-9.73, $p = 0,000$) compare with non-smoking, grade 3 hypertension HR 5,96 (CI 2.69-13.21, $p = 0,000$) compare with normal blood pressure, diabetic HR 2.74 (CI 1.37-5.47, $p = 0.004$) compare with non-diabetic, obesity BMI 30 kg/m² HR 2.18 (CI 0.94-5.10, $p = 0.071$) compare with normal weight. Unmodifiable risk factor were: age $\geq$ 60 years HR 10.13 (CI 4.79-21.43) compare with 25-49 years. Physical activity as well as sport in one week has low risk for cardiovascular death, either: light physical activity HR 0.4 (CI 0.27-0.76, $p = 0.003$), moderate HR 0.32 (CI 0.15-0.70, $p = 0.004$) or heavy almost zero compare with no physical activity. Jakarta Cardiovascular Score was found. Low risk (score -7 to 1) <10%, average (score 2 to 4) 10 to 20%, high (score $\geq$ 5) >20% for cardiovascular event in 10 years (sensitivity 77.9%, specificity 90.0%, kappa 0,652, degree of agreement 82.67% and $p = 0,000$).

Conclusions: Cardiovascular prevention through quit or stops smoking combine with regular sports and or physical activities enhances a better survival. Jakarta Cardiovascular Score was found as a simple method to estimate the cardiovascular event in the community.