INTISARI

Latar belakang: Penyakit kardiovaskular mencakup penyakit dan kondisi jantung serta pembuluh darah yang memengaruhi aliran darah ke jantung, otak, atau daerah perifer tubuh seperti penyakit jantung koroner dan stroke karena proses aterosklerosis. Proporsi kematian akibat penyakit kardiovaskular di Indonesia lebih tinggi dari berbagai penyakit lain serta beberapa negara sekitar. Aktivitas fisik, pola makan, indeks massa tubuh (IMT) merupakan faktor risiko penyakit kardiovaskular yang dapat dimodifikasi. Inflamasi, *C-reactive protein* (CRP), merupakan elemen penting pada perkembangan penyakit kardiovaskular

Tujuan: *Indonesia Family Life Survey* (IFLS) merupakan survei longitudinal yang tepat mengkaji hubungan pola makan dan aktivitas fisik dengan insidensi penyakit kardiovaskular melalui mediasi IMT dan inflamasi.

Metode: Penelitian *cohort retrospective* data *Indonesia Family Life Survey* 2007–2008 (IFLS-4) dan 2014-2015 (IFLS-5). Subjek berusia 40-70 tahun dan tidak menderita penyakit kardiovaskular. Subjek dengan diabetes mellitus, cacat, dan hamil dikeluarkan dari sampel. Subjek diikuti selama tujuh tahun (n=2.727 orang; 54,5±8,2 tahun) yang tersebar pada 19 provinsi di Indonesia. Analsis statistik yang digunakan adalah regresi logistik dan analisis mediasi biner.

Hasil: Subjek mengonsumsi makanan sumber lemak (susu, keju, mentega, dan sejenisnya) dengan jarang (0-2 hari/minggu) 82% (n=2.212 orang); aktivitas fisik rendah 40% (n=1.087 orang); obesitas 15% (n=421 orang); inflamasi risiko tinggi 9% (n=236 orang). Insidensi penyakit jantung 3,2% (n=87 orang), stroke 2,5% (n=67 orang), kardiovaskular 5,4% (n=147 orang). *Adjusted-Risk Odds Ratio* (ROR) pola makan sumber lemak setiap hari 1,8 (95% CI=1,01-3,30); aktivitas fisik rendah 1,7 (95% CI=0,99-2,79); obesitas 1,9 (95% CI=1,11-3,34); inflamasi risiko tinggi 1,9 (95% CI=1,01-3,57) dengan penyakit jantung memperhitungkan kategori usia. Tidak terdapat perbedaan insidensi stroke berdasarkan kategori pola makan, aktivitas fisik, dan inflamasi. *Adjusted*-ROR obesitas 2,4 (95% CI=1,29-4,62) dengan penyakit stroke memperhitungkan kategori usia. *Adjusted*-ROR pola makan sumber lemak setiap hari 1,7 (95% CI=1,01-2,76); aktivitas fisik rendah 1,6 (95% CI=0,93-2,69); obesitas 1,9 (95% CI=1,23-2,91); inflamasi risiko tinggi 1,6 (95% CI=0,93-2,69) dengan penyakit kardiovaskular memperhitungkan *pulse pressure*. Terdapat hubungan mediasi parsial IMT dan inflamasi pada hubungan pola makan lemak (26,2%) dan aktivitas fisik (10,3%) ke penyakit jantung memperhitungkan usia, jenis kelamin dan tekanan darah.

Kesimpulan: Insidensi penyakit kardiovaskular lebih tinggi pada pola makan lemak setiap hari, aktivitas fisik rendah, obesitas, dan inflamasi risiko tinggi khususnya pada penyakit jantung. IMT dan inflamasi memberikan hubungan mediasi parsial dari total hubungan pola makan lemak dan aktivitas fisik ke penyakit jantung.

Kata Kunci: pola makan, aktivitas fisik, IMT, inflamasi, *C-reactive protein,* penyakit kardiovaskular, penyakit jantung, stroke, analisis mediasi

ABSTRACT

Background: Cardiovascular disease includes diseases and conditions of the heart and blood vessels that affect blood flow to the heart, brain, or peripheral areas of the body such as coronary heart disease and stroke due to the process of atherosclerosis. The proportion of deaths due to cardiovascular disease in Indonesia is higher than various other diseases as well as some surrounding countries. Dietary pattern, physical activity pattern, body mass index (BMI) are modifiable risk factors for cardiovascular disease. Inflammation, C-reactive protein (CRP), is an important element in the development of cardiovascular disease

Objective: The Indonesia Family Life Survey (IFLS) is an appropriate longitudinal survey to study the relations of dietary pattern and physical activity pattern with incidence of cardiovascular disease through mediation BMI and inflammation.

Methods: The study design was cohort retrospective using data IFLS-4 (2007-2008) and IFLS-5 (2014-2015). Subjects aged 40-70 years and not suffering from cardiovascular disease. The subjects of diabetes mellitus, disability, and pregnancy were excluded from the sample. Subjects were followed for seven years (n = 2,727 people; 54.5 ± 8.2 years) spread over 19 provinces in Indonesia. The statistical analyses used are logistic regression and binary mediation analysis

Results: Subjects consumed dietary pattern of fat (milk, cheese, butter, and the like) with rarely (0-2 day/week) 82% (n = 2,212 people); low physical activity 40% (n = 1,087 people); Obesity 15% (n = 421 people); high risk inflammation 9% (n = 236 people). The incidence of heart disease was 3.2% (n = 87 people); 2.5% stroke (n = 67 people); cardiovascular 5.4% (n = 147 people). Adjusted-Risk Odds Ratio (ROR) dietary pattern of fat daily 1.8 (95% CI = 1.01-3.30); low physical activity 1.7 (95% CI = 0.99-2.79); obesity 1.9 (95% CI = 1.11-3.34); high-risk inflammation 1.9 (95% CI = 1.01-3.57) with heart disease adjusted by age categories. There was no difference in the incidence of stroke based on diet, physical activity, and inflammation. Adjusted-ROR obesity 2.4 (95% CI = 1.29-4.62) with stroke adjusted by age category. Adjusted-ROR dietary pattern of fat daily 1.7 (95% CI = 1.01-2.76); low physical activity 1.6 (95% CI = 0.93-2.69); obesity 1.9 (95% CI = 1.23-2.91); high-risk inflammation 1.6 (95% CI = 0.93-2.69) with cardiovascular disease adjusted by pulse pressure. There is a partial mediation relationship of BMI and inflammation in the association of dietary pattern of fat (26.24%) and physical activity (10.26%) to heart disease adjusted by age, sex and blood pressure.

Conclusions: The incidence of cardiovascular disease is higher in daily dietary pattern of fat, low physical activity, obesity, and high risk inflammation, especially heart disease. BMI and inflammation provide a partial mediation relationship of the total relationship between dietary pattern of fat and physical activity to heart disease.

Keywords: dietary pattern, physical activity, body mass index, inflammation, C-reactive protein, cardiovascular disease, heart disease, stroke, mediation analysis