Pengaruh jam terbang total terhadap tekanan darah diastolik tinggi pada pilot sipil pesawat sayap tetap di Indonesia = The effect of total flight hours on diastolic blood pressure among the fixed wing civilian pilots in Indonesia

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Abstrak

Latar belakang: Jam terbang total dapat mempengaruhi sistem kardiovaskular antara lain terhadap tekanan darah diastolik (TDD) pada pilot. Tujuan penelitian ini ialah mengidentifikasi pengaruh jam terbang total dan faktor lainnya terhadap risiko TDD tinggi pada pilot sipil pesawat sayap tetap di Indonesia.
Metode: Penelitian menggunakan metode potong lintang dengan sampel purposif pada pilot sipil di Balai Kesehatan Penerbangan tanggal 1-13 Mei 2013. Karakteristik demografi, pekerjaan, kebiasaan dan fisik, diperoleh melalui wawancara dengan kuisioner untuk penelitian ini serta pemeriksaan fisik oleh peneliti. Data laboratorium diperoleh dari hasil pemeriksaan laboratorium. Spigmomanometer digunakan untuk mengukur TDD. Kategori TDD dibagi dua yaitu tinggi (80 mmHg) dan normal (<80 mmHg). Analisis menggunakan risiko relatif yaitu regresi Cox dengan waktu konstan.
Hasil: Di antara 512 pilot yang melakukan pemeriksaan medik, 236 subjek bersedia mengikuti penelitian. Subjek yang diikutsertakan dalam analisis sebanyak 225 orang, 61,4% memiliki TDD tinggi dan 38,6% memiliki TDD normal. Subjek dengan jam terbang total 4000-29831 dibandingkan dengan 4-3999 jam berisiko 34% lebih besar TDD tinggi [rasio relatif suaian (RRa) = 1,34; 95% interval kepercayaan (CI) = 1,03-1,73]. Subjek dengan denyut nadi istirahat 80-98 kali/menit dibandingkan dengan 60-79 kali/menit berisiko 29% lebih besar TDD tinggi (RRa = 1,29; 95% CI = 1,02-1,63). Selain itu subjek berusia 50-61 tahun dibandingkan dengan 18-39 tahun berisiko 26% lebih besar TDD tinggi (RRa = 1,26; 95% CI = 1,00-1,59; P = 0,048).
Kesimpulan: Jam terbang total dan denyut nadi istirahat yang tinggi serta usia yang lebih tua meningkatkan risiko tekanan darah diastolik.
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Background: Total flight hour may affect the cardiovascular system including diastolic blood pressure (DBP) in pilot. This study aimed to identify whether total flight hours and other factors increase the risk of high DBP of the fixed wing civilian pilots in Indonesia.
Methods: A cross sectional study with purposive sampling was conducted in civilian pilots at Aviation Medical Center (Balai Kesehatan Penerbangan) in May 1-13, 2013. Demographic characteristics, employment, habit and physical was obtained through interviews and physical examination by researchers. While laboratory data was obtained from laboratory tests. Sphygmomanometer was used to measure DBP. Category of DBP was classified into high (80 mmHg) and normal (<80 mmHg). Analysis used risk relative by Cox regression with constant time.
Results: Among the 512 pilots who conducted medical examinations, 236 subjects agreed to joint the study. This analysis included 225 subjects which 61.4% had high DBP and 38.6% normal DBP. The subjects with total flight hours of 4000-29831 compared to 4-3999, had 34% increased risk to have high DBP [adjusted relative risk (RRa) = 1.34; 95% confidence interval (CI) =1.03-1.73]. The subjects with resting pulse rate of

80-98/minute compared to 60-79/minute, had 29% increased risk to have high DBP (RRa = 1,29; 95% CI = 1,02-1,63). Furthermore, subjects aged 50-61years compared to 18-39 years, had 26% increased risk to have high DBP (RRa = 1,26; 95%CI=1,00-1,59; P = 0,048).
Conclusion: High total flight hours, resting pulse rate and older age may increase the risk of high diastolic blood pressure.