

High intensity interior aircraft noise increases the risk of high diastolic blood pressure in Indonesian Air Force pilots

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Abstrak

Tujuan Untuk menganalisis apakah bising pesawat terbang denyut nadi istirahat, dan faktor lain berperan meningkatkan risiko kejadian tekanan darah diastolik (TDD) pada penerbang TNI AU.

Metode Desain penelitian nested case-control. Data berasal dari rekam medis hasil pemeriksaan kesehatan berkala dan indoktrinasi latihan aerofisiologi di LAKESPRO Saryanto di Jakarta antara Januari 2003 ? September 2008. Kelompok kasus ialah subjek dengan TDD ≥ 90 mmHg; kelompok kontrol adalah dengan TDD ≤ 89 mmHg. Setiap kasus dipadankan dengan 12 kontrol.

Hasil Di antara 567 penerbang, 544 (95,9%) mempunyai rekam medis yang lengkap, dan diperoleh 40 kasus dan 480 kontrol. Penerbang yang biasa terpajan bising dalam pesawat 90-95 dB dibandingkan 70-80 dB mempunyai risiko 2,7 kali menderita TDD tinggi [rasio odds (ORa) = 2,70; 95% interval kepercayaan (CI) = 1,05-6,97]. Penerbang dengan frekuensi nadi istirahat ≥ 81 /menit dibandingkan ≤ 80 /minute mempunyai risiko 2,7 kali TDD tinggi (ORa = 2,66; 95% CI = 1,26- 5,61). Ditinjau dari segi total jam terbang, penerbang dengan total jam terbang 1401-11125 jam dibandingkan 147-1400 jam mempunyai risiko 3,2 kali menderita TDD tinggi (ORa = 3,18; 95% CI = 1,01-10,03).

Kesimpulan Intensitas bising dalam pesawat yang tinggi, frekuensi nadi istirahat yang tinggi, jumlah jam terbang total yang tinggi meningkatkan risiko TDD tinggi. Pemeriksaan mawas diri frekuensi nadi istirahat oleh penerbang dapat dipakai untuk pengendalian TDD tinggi.

Aim To analyze the effects of aircraft noise, resting pulse rate, and other factors on the risk of high diastolic blood pressure (DBP) in Indonesian Air Force pilots.

Methods A nested case-control study was conducted using data extracted from annual medical check-ups indoctrination aerophysiological training records at the Saryanto Aviation and Aerospace Health Institute (LAKESPRO) in Jakarta from January 2003 ? September 2008. For analysis of DBP: the case group with DBP = 90 mmHg were compared with control group with DBP < 79 mmHG. One case matched to 12 controls.

Results Out of 567 pilots, 544 (95.9%) had complete medical records. For this analysis there were 40 cases of high DBP and 480 controls for DBP. Pilots exposed to aircraft noise 90-95 dB rather than 70-80 dB had a 2.7-fold increase for high DBP [adjusted odds ratio (ORa) = 2.70; 95% confidence interval (CI) = 1.05-6.97]. Pilots with resting pulse rates of ≥ 81 /minute rather than ≤ 80 /minute had a 2.7-fold increase for high DBP (ORa = 2.66; 95% CI = 1.26-5.61). In terms of total flight hours, pilots who had 1401-11125 hours rather than 147-1400 hours had a 3.2-fold increase for high DBP (ORa = 3.18; 95% CI = 1.01-10.03).

Conclusion High interior aircraft noise, high total flight hours, and high resting pulse rate, increased risk for high DBP. Self assessment of resting pulse rate can be used to control the risk of high DBP.