LOW BACK PAIN DUE TO WHOLE-BODY VIBRATION IN PROFESSIONAL DRIVERS

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[ID 1100]

Introduction

Long term occupational exposure to whole-body vibration (WBV) is associated with an increased risk of Low Back Pain (LBP). The aim of this study was to investigate the prevalence of LBP in various groups of Dutch professional drivers. This cross sectional survey represents the baseline investigation of a prospective cohort study of dose-response relationships for musculoskeletal symptoms in WBV-exposed drivers recruited in a four year research project funded by the EU commission (VIBRISKS).

Subjects and Methods

The study population included 574 male professional drivers employed in agriculture, manufacturing industries, construction, community and transport. Personal, occupational and health histories were collected by means of a standardized questionnaire within the VIBRISKS project. Vibration measurements were performed on representative samples of the machines and vehicles (n=50) used by the driver groups. In accordance with the EU Directive on Physical Agents and the ISO standard 2631-1, daily vibration exposure was assessed in terms of 8-h energy-equivalent frequency weighted acceleration, A(8) in ms-2 r.m.s.

Results

The response rate was 52%. Of the professional drivers, 31.1% reported LBP in the last 7 days, and 55.5% reported LBP in the last 12 months. The average daily exposure duration was 7,9 ± 2,7 hrs per working day. Average lifetime duration of exposure to WBV was 18,0 ± 12,4 yrs. Daily vibration exposure, A (8), ranged from 0.09 to 2.43 ms-2 r.m.s. with an average of 1,25 ms-2 r.m.s.. In the professional drivers, the occurrence of 12-month LBP, high LBP intensity, and LBP disability significantly increased with increasing vibration exposure.

Conclusion

Based on preliminary results, this study confirms that professional driving in industry is associated with a high prevalence of work related LBP.

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TINNITUS IN NOISE EXPOSED WORKERS WITH AND WITHOUT HEARING LOSS

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[ID 740]

Tinnitus is a frequent consequence of acute acoustic trauma. Patients with permanent hearing impairment and noise induced hearing loss often suffers form tinnitus. However, it is unknown if long-term, non-traumatic noise exposure causes tinnitus without concomitant hearing impairment. This study investigates the relationship between noise exposure and tinnitus among workers with and without hearing loss.

We conducted a cross sectional survey of 753 workers employed at 91 workplaces analyzed by means of full work-shift noise levels, questionnaire data and bilateral pure tone audiometry. Risk of tinnitus according to current and lifelong occupational exposure to noise was analyzed by logistic regression with adjustment for noise exposure outside work, age, gender and ear disease.

We observed no association between tinnitus and the present noise level, the duration of noise exposure or the cumulative noise exposure if participants had a normal hearing. As expected, such trends were demonstrated if participants had a hearing handicap.

Based on these data, we will be cautious in ascribing tinnitus to noise exposure in our patients' workplaces if they have a normal audiogram.

IS NOISE INDUCED HEARING LOSS STILL A PROBLEM IN THE DANISH WORKFORCE?

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[ID 752]

Documentation of the extent of noise-induced hearing loss in the working population is limited. This study reports on the prevalence of noise-induced hearing loss in a population sample of workers in Denmark.

Methods

We recruited 788 workers from 11 trades with expected high noise exposure levels. For reference, financial employees and a sample of residents were investigated according to the same protocol. Full-shift A-weighted equivalent sound levels were recorded and pure tone audiometric examinations were conducted at the work sites in soundproof boots. Data were analyzed with multivariate regression techniques and adjusted for environmental noise exposure, age, sex and ear disease.

Results

An overall two-fold increased risk of hearing handicap (hearing threshold above 20 dB averaged across 2, 3 or 4 kHz for either ear) was observed in the noise exposed workers [odds ratio (OR) 1.99, 95% confidence interval (CI) 0.91-4.34]. Workers exposed for more than 20 years to an exposure level above 85 dB(A) had a three-fold increased risk. Workers starting in noisy work during the last 10-15 years or workers below 30 years of age showed no increased risk of hearing handicap.

Discussion

Noise-induced hearing loss remains prevalent in several trades, but preventive measures enforced during the past 10-15 years to reduce noise exposure may have born fruit. Systematic surveillance of noise and hearing levels in appropriate populations should still be included in an efficient hearing conservation program.

SLEEP QUALITY AND SUBJECTIVE HEALTH PARAMETERS IN FLEMISH TRUCK DRIVERS.

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[ID 592]

Objective:

To assess the sleep quality and to explore its association with (subjective) health parameters in a population of Flemish truck drivers.

Methods

In this cross-sectional study 474 drivers filled in a self-administered questionnaire that included 3 sleep questionnaires: PSQI (Pittsburgh Sleep Questionnaire), ESS (Epworth Sleeping Scale) and BQ (Berlin Questionnaire). General health was (self)rated on a 5-point scale and dichotomised in good/poor.

Results

Mean age of the drivers was 42.7±10.2 years. 75.5% had more than 10 years experience as a trucker. Their mean monthly professional driving distance was 10149±5739km.

The mean PSQI score was 5.03±2.80, mean ESS score was 6.79±4.17. The BQ indicated that 14.9% had a higher risk on sleep apnoea.

Regarding PSQI and ESS, the percentage of drivers reporting good health was significantly higher (Kruskal-Wallis test) in the first quartile (Q1) compared to the last quartile (Q4). For PSQI: 94.29% (Q1) vs 62.64% (Q4), $p<0.001$. For ESS 88.03% (Q1) vs 71.43% (Q4), $p<0.05$.

Regarding the Berlin score, the % of drivers reporting good health was significantly lower (Chi-square 36.58, $p<.001$) in the group at risk of sleep apnoea (9.6%) compared to the group not at risk (90.4%).

Sleep score result was significantly higher or worse (Mann-Whitney U, $p<0.05$) in the group that reports suffering from musculoskeletal diseases (PSQI/ESS/BQ), injury by accident (PSQI/BQ), cardiovascular diseases (ESS/BQ), respiratory diseases (PSQI/ESS/BQ), psychiatric problems (PSQI/ESS/BQ), neurological diseases (PSQI), diseases of the digestic tract (PSQI/ESS), diseases of urinary or genital organs (ESS), dermatological problems (ESS/BQ) and endocrine disorders (ESS/BQ).

Conclusion

Poor sleep quality as expressed by sleeping scales is associated with poor (self-rated) health. In evaluating and improving health of truck drivers, focus on sleeping problems should be increased. In this, PSQI, ESS and BQ can be a very helpful instrument in detecting sleep disorders.