



Drug Monitor

Analgesics and Risk of Hearing Loss

When male patients experience hearing loss, clinicians should ask about their use of analgesics. According to researchers from Brigham and Women's Hospital, Massachusetts Eye and Ear Infirmary, and Harvard School of Public Health, all in Boston, MA, and Vanderbilt University, Nashville TN, regular use of aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), and acetaminophen may significantly increase the risk of hearing loss in men, especially in those younger than 50 years of age.

In order to determine the relationship between analgesics and diagnosed hearing loss, the researchers surveyed 26,917 males aged 40 to 74 years at baseline. Every two years thereafter, participants completed questionnaires about diet, medical history, and regular use—defined as two or more times per week—of aspirin, NSAIDs, and acetaminophen. During 369,079 person-years of follow-up, 3,488 incident cases of hearing loss were reported.

Regular use of all three types of analgesics was independently associated with an increased risk of hearing loss. Participants who used aspirin regularly for one to four years had a 28% higher risk of developing hearing loss than those who were not regular aspirin users; the risk of hearing loss did not increase with longer duration of aspirin use, however. Participants who regularly used NSAIDs or acetaminophen for four or more years had a 33% greater risk than those who did not use these agents regularly; the risk of hearing loss increased with longer duration of regular use.

The risk of hearing loss tended to decrease with advancing age:

Regular aspirin users aged 59 years and younger had a 33% higher risk than nonregular users, but no such association was found among men aged 60 years and older. Men aged 50 years and younger who regularly used NSAIDs were 61% more likely to have hearing loss than nonregular users, whereas those aged 60 years and older were only 16% more likely. Compared with nonregular users of acetaminophen, regular users aged 50 years and younger were 99% more likely to have hearing loss, compared with 38% for those aged 50 to 59 years, and only 16% for those aged 60 years and older.

The study authors note an apparent additive effect of regular use of multiple analgesics, suggesting that different mechanisms in these classes of analgesics may impair auditory function. Because the study participants were predominantly white men, the authors recommend further research to study these associations in women, younger men, and other racial groups.

Source: *Am J Med.* 2010;123(3):231–237.
doi:10.1016/j.amjmed.2009.08.006.

Cutting Carbohydrates for Glycemic Control

Restricting carbohydrate intake may be a safe and easy way to manage blood glucose levels in critically ill patients with diabetes. Researchers from Hospital São Domingos and Hospital Dr Clementino Moura, both in São Luis, Brazil, say a carbohydrate-restrictive strategy (CRS) works just as well as intensive insulin infusion therapy (IIT) in reducing the incidence of hypoglycemia in this patient population.

To compare the efficacy of these glycemic control strategies, 337 patients were randomly assigned to

two groups. In one group, 169 patients received a CRS comprised of glucose-free venous hydration, hypoglycemic nutritional formula, and subcutaneous insulin if blood glucose levels exceeded 180 mg/dL. In the second group, 168 patients received IIT to normalize their blood glucose levels.

Patients in the CRS group received two (0 to 6.5) units of regular insulin per day, while patients in the IIT group received 52 (35 to 74.5) units per day ($P < .001$). The median blood glucose level was 144 mg/dL in the CRS group versus 133.6 mg/dL in the IIT group ($P = .003$). Hypoglycemia (defined as a blood glucose level of 40 mg/dL or less) occurred more than four times as often among IIT group patients as those in the CRS group (27 patients versus six patients, respectively; $P < .001$).

Morbidity and mortality were comparable: No differences were seen in the incidence of infectious complications and organ dysfunction, and in both groups, approximately one-quarter of the patients died while in the intensive care unit (42 in the CRS group and 38 in the IIT group).

The researchers emphasize that their study was not intended to compare IIT with foregoing glycemic control completely, but to compare the safety and efficacy of two different strategies for glycemic control in critically ill patients. However, they add, their findings suggest that CRS also may be beneficial to patients who are not critically ill. ●

Source: *J Crit Care.* 2010;25(1):84–89. doi:10.1016/j.jcrc.2008.10.011.