

Alcohol, Pain, and Opioids: Which Is a Major Threat to Driving Ability?

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TO THE EDITOR: In a recent review of medications and impaired driving, the authors concluded that it was difficult to determine if impaired driving performance was a result of psychotropic medication or the underlying condition.¹ Opioids are associated with sedation and dizziness, and there are concerns regarding their impact on driving; however, data suggest that strong opioids do not necessarily impair and may even improve psychomotor, cognitive functioning, and driving ability in patients with chronic noncancer pain.² Italian law prohibits driving while taking psychoactive substances, including opioids, if it causes psychophysical disturbances (Italian Highway Code, Rule 187); however, roadside assessment is impractical. For driving under the influence of alcohol, no evaluation of psychophysical status is required; blood alcohol levels >0.5 g/L lead to driving license withdrawal (Italian Highway Code, Rule 186).

We report our data from a recent study investigating the effects of opioids on psychomotor performance in patients with chronic pain and a comparison with volunteers before and after alcohol consumption.

After approval from our local ethics committee, we compared psychomotor effects in healthy volunteers before and after “legal” alcohol exposure (<0.5 g/L) and oral fixed-dose prolonged release oxycodone-naloxone (OXN), an opioid agonist-antagonist combination effective for pain treatment with fewer gastrointestinal side effects versus other strong opioids, in patients with chronic pain. We performed noninvasive simple and complex visual and auditory reflex assessments in 35 volunteers (mean age = 36.8 ± 7.9 years) and in 10 patients (mean age = 62.2 ± 7.3 years) with severe chronic nonmalignant pain (Numerical Rating Scale >6) taking no psychotropic drugs and with preserved mental status (Mini Mental Status Examination score >26). Patients were assessed at baseline, at 1 week after starting oral OXN 10 mg twice daily, and after 2 weeks, when the stable OXN regimen had achieved good pain relief (Numerical Rating Scale ≤3).

After alcohol consumption, 25/35 healthy volunteers had blood alcohol <0.5 g/L. Baseline reaction performance (Table 1) was worse in patients than in healthy volunteers ($P < 0.01$). In patients, performance did not change substantially after 1- and 2-week OXN exposure. In volunteers, performance was significantly impaired with alcohol <0.5 g/L ($P < 0.001$). Linear regression analysis found significant but modest correlations between alcohol levels and changes in visual and auditory reflexes ($P < 0.05$ for all), but changes from baseline were similar in those with blood alcohol less than or greater than 0.5 g/L.

The percentage decrease in visual and auditory performance after alcohol exposure is consistent with that reported by other investigators.^{3,4} Baseline values in patients were significantly worse than in healthy volunteers, in accordance with literature suggesting that pain negatively affects visual and auditory performance.⁵ Our data support those from previous studies,² suggesting that, unlike healthy volunteers exposed to legal alcohol doses, psychomotor functioning, crucial for safe driving, is not impaired in patients receiving effective pain relief with OXN therapy. Reliable objective noninvasive tools that assess visual and auditory reflexes are now available for mobile devices for simple roadside evaluation of psychomotor and cognitive functioning of drivers with chronic pain treated with opioids.

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Table 1. Reaction Times to Simple and Complex Visual and Auditory Reflexes in Healthy Participants at Baseline and After Moderate Alcohol Exposure (ie, Causing Blood Alcohol Levels ≤ 0.49 g/L) and in Patients With Chronic Pain at Baseline and After 1 and 2 Weeks of Oral Oxycodone-Naloxone (OXN).

Reaction Time, ms	Healthy Volunteers (n = 25)		Patients (n = 10)		
	Baseline	After Alcohol Exposure	Baseline	1-Week OXN	2-Week OXN
Visual reflex, simple	318.4 \pm 65.6	364.5 \pm 75.6 ^a	447.7 \pm 166.5 ^b	582.8 \pm 267.6	457.7 \pm 132.0
Auditory reflex, simple	355.7 \pm 53.9	394.4 \pm 55.1 ^a	846.4 \pm 445.8 ^b	692.9 \pm 469.7	579.0 \pm 248.6
Visual reflex, complex	483.0 \pm 44.9	530.9 \pm 42.4 ^a	737.3 \pm 225.2 ^b	760.2 \pm 227.0	659.9 \pm 200.8
Auditory reflex, complex	620.1 \pm 127.2	684.1 \pm 110.7 ^a	1028.0 \pm 321.7 ^b	947.6 \pm 346.7	901.7 \pm 234.7

^a<0.001 Versus corresponding baseline value.

^b<0.01 Versus corresponding baseline value in healthy volunteers.

Declaration of Conflicting Interests

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