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Chapter 10

Dual effect of alcohol on pain in rheumatoid arthritis

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To the Editor:

Due to its analgesic effects, alcohol can diminish joint pain, one of the symptoms of rheumatoid arthritis (RA). However, both relief from, and aggravation of, joint pain have been reported from patients with RA in relation to alcohol use (Bradlow & Mowat 1985, Blaze-Temple *et al.* 1992). This inconsistency might be explained by a delayed worsening effect of alcohol on RA pain in addition to short-term alleviation of pain.

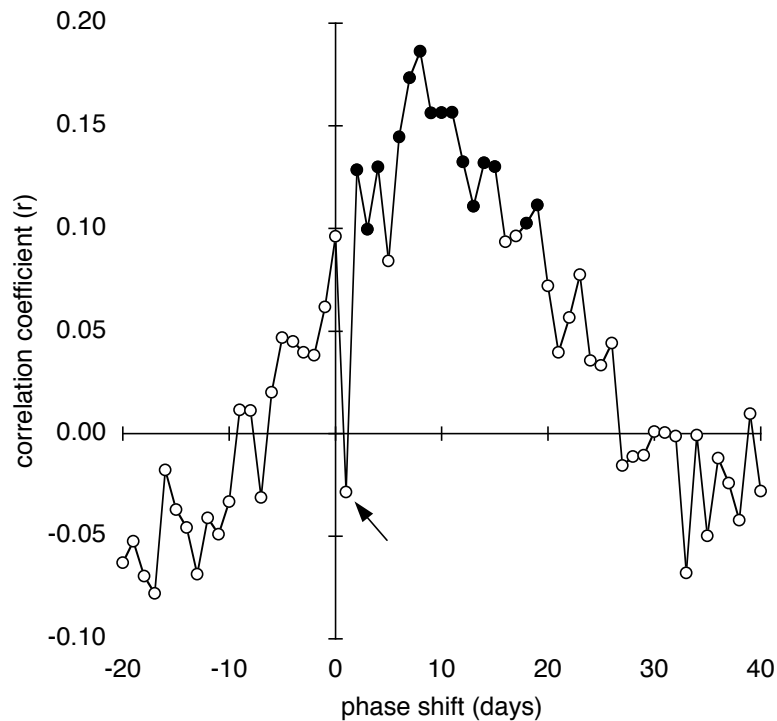


Figure 1 Plot of correlation coefficient for the relation between daily alcohol intake and joint pain score in a patient with RA (●: $p < 0.001$). Pain score data were time shifted from -20 to +40 days with respect to alcohol intake data.

One of the authors (WRP), a 51-year-old man with RA since 1979 satisfying American College of Rheumatology criteria (Arnett *et al.* 1988), and with positive rheumatoid factor, quantified his daily joint pain (602 scores) as described earlier (Patberg 1989) for 3 years (1994-1996). Daily joint pain was found to correlate positively with the daily number (range

0-5) of alcoholic beverages taken (885 scores) during the 3 years (Figure 1, at phase shift 0 days). The correlation gradually increases when the pain score data are shifted back in time with respect to the alcohol data, reaching a maximum at a phase shift of 8 days ($r = 0.22$, $p < 0.001$). This indicates that alcohol intake is followed by an increase in joint pain 8 days later on the average. It might be argued that this finding is related to the positive correlation between RA pain and the meteorological temperature and humidity (Patberg 1989), *e.g.* as a result of drinking more beer in summer. However, correlation of the alcohol intake with these weather factors during 1994-1996 shows a negative relationship, indicating independent influences of weather and alcohol.

The negative peak (Figure 1, arrow) found at a phase shift of 1 day illustrates the analgesic effect of alcohol: alcohol intake in the evening lowers the joint pain score determined on the following morning.

Although other constituents of the alcoholic beverages taken (mostly beer and Dutch gin) may play a role, we consider that it is the alcohol that affects the pain. The effect of alcohol on the disease itself is unclear. A lowered production of corticosteroids due to the blunting effect of alcohol on the ACTH response may play a role. It seems clear, however, that apart from the short-term analgesic effect, alcohol worsens joint pain in RA.

References

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