



# The Influence of Caffeine on Smoking Cessation: A Case Presentation

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L.P., a male aged 51, was referred to me, having quit smoking two weeks prior. He was using adequate nicotine replacement therapy in the form of 21 mg nicotine patch and adjuvant 4 mg when required. He had no cravings or urges to smoke. He was, however, extremely agitated, very restless, and unable to sleep. His partner volunteered that he was unusually agitated and that these symptoms were severe enough to warrant referral and presentation to our specialist smoking cessation unit.

L.P. had no history of mental illness or substance abuse but complained of distressing sleeplessness and agitation as 'these symptoms of tobacco withdrawal'.

On presentation he was an extremely agitated man, unable to sit still during the interview. His tobacco smoking cessation was validated by expired CO. He was otherwise well and his mental health assessment was normal with no other symptoms.

As a routine assessment he was asked about caffeine intake of any form and L.P. volunteered to having his usual five cappuccino coffees per day as well as 2 litres of cola per day.

Caffeine toxicity was considered as the cause of the symptoms of agitation and insomnia. It was recommended he halve this intake of caffeinated drinks immediately.

On follow-up one week later, this change in his caffeine intake dramatically affected his symptoms. He sat calmly, was no longer agitated and was able to sleep a full night. L.P. remains abstinent from tobacco use.

## Discussion

Caffeine toxicity is not uncommon as a consequence of stopping smoking and smokers often misinterpret the symptoms of caffeine toxicity as tobacco withdrawal (Swanson, Lee, & Joyce, 1994). The use of nicotine replacement products, however adequate, will not effect these interactions as it is the PAHs (polycyclic aromatic hydrocarbons) that are produced in the smoke that induce the production of CYP1A2 liver enzymes. These can greatly enhance the metabolism of caffeine (among other ingested products). In his review in this issue Murray (2010) informs us about both the mechanism and chemicals that are affected by the enhanced production of CYP1A2 during smoking and the effects this might have on cessation.

It is important that both patients and health care workers do not misinterpret symptoms of toxicity as symptoms of withdrawal, and consider drug interactions such as these as important components of smoking cessation advice as it may 'make or break' a cessation attempt.

## References

- Swanson, J.A., Lee, J.W., & Joyce, W.H. (1994). Caffeine and nicotine: A review of their joint use and possible interactive effects in tobacco withdrawal. *Addictive Behaviors, 19*(3), 229–256.
- Murray, M. (2010). Cytochromes P450: Roles of the biotransformation of chemicals in cigarette smoke and impact of smoking cessation on concurrent drug therapy. *Journal of Smoking Cessation, 5*(2) 107–114.