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“Age Dependent Disease in Opiate Addiction”

A summary of findings

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A summary of a Research Paper by Dr. Stuart Reece, School of Psychiatry and Clinical Neurosciences, University of Western Australia entitled: Differing age related trajectories of dysfunction in several organ systems in opiate dependence, published by Aging Clinical and Experimental Research, Feb 2011. http://www.ncbi.nlm.nih.gov/pubmed/21339699

Long term users of opiates, cannabis and methadone may be ageing far more rapidly and be at risk of dying at a younger age than the general population of non-drug users due to multiple body organ stress resulting from their drug use. Medical research is showing that higher levels and frequency of drug use correlate with signs of increased rates of ageing.

Medical treatments such as methadone maintenance programs and use of medicinal cannabis for ill patients may need more attention be given to the stress the treatments are placing on the organs of the recipients to avoid them exacerbating prior known conditions or suffering further complications.

Background

International autopsy research reported over the past three decades shows convincingly that drug addicts typically experience multiple medical disorders [1,2,3] One detailed Australian autopsy study undertaken in Sydney showed much worse general heath amongst drug addicts in relation to heart, blood vessels, kidney, liver and lung disease than in an age matched non-drug exposed group.[4]

Reports of advanced osteoporosis in young addicted males on methadone maintenance treatment [5] seem to confirm the picture of multisystem organ stress and premature failure in addiction.

Medical research in the past ten years has shown without doubt that hair greying is clearly a sign of ageing in humans and has been related to failure of the stem cell niche in the hair bulge [6]; the common occurrence of drug dependent patients being prematurely grey is therefore particularly compelling evidence that drug addiction is causing premature ageing.[7]

Another body of literature has shown that opiate addiction is associated with an adverse cardiovascular risk profile including higher blood pressure [8, 9, 10], higher cholesterol [8, 11], higher glycaemic indices [12, 13], greater body weight, and an adverse hormonal profile, together with a particular pattern of suppressed immune system [14, 15] which has also been noted in the very elderly ageing in an unhealthy way [15, 16], all of which are likely to predispose to atherosclerotic disease.

The aims of a recent Queensland study [18] into the influence of long term drug use were to:

1. combine and compare measurements of several major indicators of ageing: hair condition and greying of hair, dental status and mental status between opiate addicted and general medical patients. The major hypothesis was that the age related trajectory of the combined scores for these indicators of ageing would be significantly different between drug addicted versus general medical patients.

2. A second major objective of the study was to compare the effect of the various drugs of abuse by advanced statistical analysis techniques. Patients were asked about their usual dose of seven drugs (heroin, morphine, methadone, tobacco, alcohol, amphetamines and cannabis) and their frequency of use and how long they had been using them.

The study was facilitated by the application of modern statistical methods to previously published databases which allowed the data from drug users and non drug users (patients at a clinic presenting with common health problems, but not taking illicit drugs) to be combined and analyzed together.

Results and discussion

Results from comparison of the four indicators of ageing used in this study [19] show a significant difference between ageing of people in the study who had a substance use disorder versus those without a substance use disorder. Signs of ageing were found to appear earlier in the drug dependent cohort – to the extent that, in a sample of 127 subjects in this study, when individuals with a history of substance use reach 60 years of age, they would on average have an effective age of 73.3 years. This measure of more than 20% difference in ageing implies that the long term toxicity of drug addiction may have been seriously underestimated, and clearly invites further clinical and laboratory based studies.

These results have obvious implications for programs treating long term drug use such as methadone maintenance programs, and suggests that consideration might be given to increasing the level of surveillance of such patients for subclinical forms of age related disease. This work also has implications for programs such as medical cannabis supply to ill patients, in suggesting that the long term supply of such supplements on a medicinal basis may actually exacerbate either prior known conditions or sub-clinical disorders. And lastly, as programs such as methadone maintenance are widely reputed to be so unusually successful the findings of recent research into multiple medical disorders of long term substance users form a model for further medications development with potential application in the field of addiction medicine.

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