



## Commentary

### Age of onset of alcoholism: Improving samples & design to inform policy

Age of onset has remained a crucial aspect of prognostication in psychiatry. This has been evident to some extent in the literature on alcoholism as well. Younger age of onset is a key discriminator in the well-known Cloninger<sup>1</sup> typology. Here the type 2 with the younger-onset individuals tends to show far higher morbidity, over time. Given that far higher number of persons in the community use alcohol in a sporadic manner, and only a smaller fraction goes on to show heavier and clinically significant levels of use, one can discriminate terms such as the age of first drink, age of onset of regular use, age of onset of problem drinking, age of onset of hazardous/harmful use and age of onset of dependence. Such terms have been well delineated by some authors<sup>1-3</sup>. In a study using a retrospective survey design in rural and urban communities of Goa, adolescent-onset alcohol use has been reported to increase the likelihood of long-term adverse outcomes<sup>4</sup>. Such surveys of alcohol use in the community employ various means to distinguish some of the terms related to the onset of use/abuse, based on the growing beliefs in the value of such terminology<sup>5</sup>. There has been a long-held view that age of onset of regular use, daily use or harmful use of alcohol is more relevant for clinical purposes<sup>6</sup>. It is also known that lower age of first use is more evident in those with a family history of alcoholism and also seen to predict higher risk for developing harmful use<sup>7</sup>. The issue of legal age for alcohol use also becomes relevant. This potentially troublesome demographic can be gainfully manipulated by health policies that decide permissible ages for alcohol use. The study by Soundararajan *et al*<sup>8</sup> in this issue pertains to the long-term impact of age of onset phenomenon, using a retrospective design and clinical samples. This study imputes that the age of first use of alcohol may lead to heavier use in the longer term and argues that increasing the legal age of drinking can potentially mitigate alcoholism.

While clinical measures such as the Structured Clinical Interview for DSM, alcohol section of the Semi-Structured Assessment for the Genetics of Alcoholism-II, alcohol section of Schedules of Assessment of Neuropsychiatry schedule and Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV have all been used, Indian literature also shows the use of Addiction Severity Index<sup>9</sup>, Severity of Alcohol Dependence Questionnaire<sup>10,11</sup>, Short Alcohol Dependence Data<sup>12</sup> and Alcohol Dependence Scale<sup>13</sup> as measures of severity. A study has also raised issues about the role of Alcohol Use Disorders Identification Test (AUDIT) as a severity measure and its clinical implications<sup>14</sup>. Soundararajan and colleagues<sup>8</sup> have used valid quantity-frequency measure in International Classification of Disease 10-based clinically ill subjects with alcoholism; the results are a secondary analysis from a study looking at personality variables and relapse in alcoholism. It would be obvious that for comparable current ages, lowered age of onset would imply longer duration and it would be good practice to control for the age of onset before describing duration of drinking as a variable.

Several studies have looked at the age of onset of alcoholism in India<sup>10,15-19</sup>. The value assigned to this variable includes that of a descriptor in surveys of selected<sup>13,17,19</sup> and unselected population<sup>16</sup>, that of a key discriminator<sup>16,18,20</sup>, that of phenomena linked to other key clinical variables<sup>10,13</sup> and as a prognosis indicator<sup>10,21,22</sup> including the article in this issue<sup>8</sup>. Age of onset of dependence / withdrawal symptoms have been discussed as key reflector of genetic basis<sup>23,24</sup> and linked to endophenotypes<sup>17,25</sup>. While linking age of onset with adult drinking patterns, ideally one would wish to see prospective long-term cohorts, linking age of onset of first use and/or heavy use of alcohol with later outcomes. Such studies are demanding and rare. Some data are available on such aspects from across the globe<sup>26</sup>. Indian studies have generally imputed the role

of age of onset of first/heavy use of alcohol with later clinical outcomes using clinic samples<sup>18,22</sup>. Arguably, this can be misleading as we do not have access to those who may have begun early but did not develop severe alcohol use. Thus, the observable impact of the age of onset in alcoholism in population versus that in hospital samples can be expected to be different. Hence, for policy issues which will impact on the community as a whole, good data from community samples following up users from the second decade to late third decade would be crucial. One can question the real additional utility of studies that correlate the age of first use measures with clinically described indices of severity in clinical samples. The current study<sup>8</sup> has reported the impact of age of first use with a retrospective design based on 99 hospital-based individuals with clinically significant alcoholism.

There are studies looking at family history and age of onset from India with systematic measures<sup>10,13,19,27</sup>. The conclusion from this study<sup>8</sup> also supports the relationship between family history and age of onset in an indirect manner. In light of the previous studies, this conclusion is apparently not novel. Even here, the previous reports show larger samples and more comprehensive assessment of family history. Apart from family history, the current study<sup>8</sup> has systematically assessed behavioural measures of smoking and controlled for this gatekeeper effect in understanding the relationships of interest.

Do we have data to suggest that age for drinking should not be lowered? This will depend on good prospective studies employing community-based unselected subjects in their early teens (or unselected teenagers from school and hospitals settings). Such reports from different parts of the country are arguably more appropriate to guide policy. The continued role for hospital-based retrospective studies using currently severe users of alcohol, to support the age of drinking policies is questionable. In fact, the argument that increasing the legal age to permit alcohol use to reduce potential morbidity is well accepted amongst health professionals. The issue is how to obtain good data in its support. Prospective follow up studies of high school-based cohorts would be the most feasible. Using retrospective designs can be more economical and give quicker results but with reduced reliability. Even here, recruiting those who report having ever used alcohol from diverse healthcare settings or community settings and then using well-delineated measures of 'Onset of use',

'Onset of regular use' *etc.*, would be more informative. At the least, from general hospital settings, one can think of surveys of current alcohol use in all those who answer affirmatively for the 'ever use' question, across various departments, over a reasonable length of time. Such individuals can be asked for their age of first use or regular use and more reliable conclusions of the association attempted. One study<sup>28</sup> surveying individuals in non-psychiatric departments of a large teaching hospital reported 21 per cent of them as having problem-drinking using AUDIT. However, it did not ask for the age of onset of drinking - first use, harmful use *etc.*

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## References

1. Johnson BA, Cloninger CR, Roache JD, Bordnick PS, Ruiz P. Age of onset as a discriminator between alcoholic subtypes in a treatment-seeking outpatient population. *Am J Addict* 2000; 9 : 17-27.
2. Grant BF, Dawson DA. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *J Subst Abuse* 1997; 9 : 103-10.
3. Hingson RW, Heeren T, Winter MR. Age at drinking onset and alcohol dependence: Age at onset, duration, and severity. *Arch Pediatr Adolesc Med* 2006; 160 : 739-46.
4. Pillai A, Nayak MB, Greenfield TK, Bond JC, Hasin DS, Patel V, *et al.* Adolescent drinking onset and its adult consequences among men: A population based study from India. *J Epidemiol Community Health* 2014; 68 : 922-7.
5. DeWit DJ, Adlaf EM, Offord DR, Ogborne AC. Age at first alcohol use: A risk factor for the development of alcohol disorders. *Am J Psychiatry* 2000; 157 : 745-50.
6. Irwin M, Schuckit M, Smith TL. Clinical importance of age at onset in type 1 and type 2 primary alcoholics. *Arch Gen Psychiatry* 1990; 47 : 320-4.
7. Grant BF, Stinson FS, Harford TC. Age at onset of alcohol use and DSM-IV alcohol abuse and dependence: A 12-year follow-up. *J Subst Abuse* 2001; 13 : 493-504.
8. Soundararajan S, Narayanan G, Agrawal A, Prabhakaran D, Murthy P. Relation between age at first alcohol drink & adult life drinking patterns in alcohol-dependent patients. *Indian J Med Res* 2017; 146 : 606-11.
9. Pal HR, Yadav D, Mehta S, Mohan I. A comparison of brief intervention versus simple advice for alcohol use disorders

- in a North India community-based sample followed for 3 months. *Alcohol Alcohol* 2007; 42 : 328-32.
10. Johnson PR, Banu S, Ashok MV. Severity of alcoholism in Indian males: Correlation with age of onset and family history of alcoholism. *Indian J Psychiatry* 2010; 52 : 243-9.
  11. Khalid A, Kunwar AR, Rajbhandari KC, Sharma VD, Regmi SK. A study of prevalence and comorbidity of depression in alcohol dependence. *Indian J Psychiatry* 2000; 42 : 434-8.
  12. Abraham J, Chandrasekaran R, Chitralkha V. A prospective study of treatment outcome in alcohol dependence from a deaddiction centre in India. *Indian J Psychiatry* 1997; 39 : 18-23.
  13. Tiwari R, Srivastava AS, Sheikh K, Kaushik SS. Associates of severity of alcohol dependence. *Indian J Prev Soc Med* 2012; 43 : 19-24.
  14. Pradeep RJ, Dhilip AM, Mysore A. Do SADQ and AUDIT identify independent impacts of alcohol abuse - Clinical and biochemical markers respectively? *Indian J Psychiatry* 2015; 57 : 278-83.
  15. Varma VK, Singh A, Singh S, Malhotra A. Extent and pattern of alcohol use and alcohol-related problems in North India. *Indian J Psychiatry* 1980; 22 : 331-7.
  16. Varma VK, Basu D, Malhotra A, Sharma A, Mattoo SK. Correlates of early- and late-onset alcohol dependence. *Addict Behav* 1994; 19 : 609-19.
  17. Chagas Silva M, Gaunekar G, Patel V, Kukalekar DS, Fernandes J. The prevalence and correlates of hazardous drinking in industrial workers: A study from Goa, India. *Alcohol Alcohol* 2003; 38 : 79-83.
  18. Manjunatha N, Saddichha S, Sinha BN, Khess CR, Isaac MK. Chronology of alcohol dependence: Implications in prevention. *Indian J Community Med* 2008; 33 : 233-7.
  19. Sarkar AP, Sen S, Mondal S, Singh OP, Chakraborty A, Swaika B, *et al.* A study on socio-demographic characteristics of alcoholics attending the de-addiction center at Burdwan medical college and hospital in West Bengal. *Indian J Public Health* 2013; 57 : 33-5.
  20. Nair UR, Vidhukumar K, Prabhakaran A. Age at onset of alcohol use and alcohol use disorder: Time-trend study in patients seeking de-addiction services in Kerala. *Indian J Psychol Med* 2016; 38 : 315-9.
  21. Korlakunta A, Chary RSS, Reddy CMP. Reasons for relapse in patients with alcohol dependence. *AP J Psychol Med* 2012; 13 : 108-4.
  22. Prakash J, Bhat PS, Srivastava K, Shashikumar R. Are early onset alcoholics different? A cross-sectional observational study from a General Hospital Unit. *Delhi Psychiatry J* 2013; 16 : 73-6.
  23. Shaikh KJ, Naveen D, Sherrin T, Murthy A, Thennarasu K, Anand A, *et al.* Polymorphisms at the DRD2 locus in early-onset alcohol dependence in the Indian population. *Addict Biol* 2001; 6 : 331-5.
  24. Paul P, Dahale A, Kishore B, Chand P, Benegal V, Jain S, *et al.* Association of N-methyl-D-aspartate receptor 2B subunit (GRIN2B) polymorphism with earlier age at onset of withdrawal symptoms in Indian alcohol dependent subjects. *J Addict Dis* 2017; 36 : 48-52.
  25. Benegal V, Jain S, Subbukrishna DK, Channabasavanna SM. P300 amplitudes vary inversely with continuum of risk in first degree male relatives of alcoholics. *Psychiatr Genet* 1995; 5 : 149-56.
  26. Degenhardt L, Chiu WT, Sampson N, Kessler RC, Anthony JC, Angermeyer M, *et al.* Toward a global view of alcohol, tobacco, cannabis, and cocaine use: Findings from the WHO World Mental Health Surveys. *PLoS Med* 2008; 5 : e141.
  27. Palaniappan H, James AGW, Annamalai A. Correlation between severity of alcohol dependence with age of onset and family history among urban alcoholics: A cross-sectional study. *J Evol Med Dent Sci* 2016; 5 : 3452-7.
  28. Srinivasan K, Augustine MK. A study of alcohol related physical diseases in general hospital patients. *Indian J Psychiatry* 2000; 42 : 247-52.