Inappropriate Sexual Behaviours in Dementia: Epidemiology and Pathophysiology

EPIDEMIOLOGY

Significant variation exists in the reported prevalence of dementia-related ISB, with estimates ranging anywhere from 4-5%\textsuperscript{1,2} up to 25%.\textsuperscript{3-5} This variation is likely due to multiple factors. First, individual studies frequently differ in the participants they recruit (e.g., dementia type and severity) and study setting (e.g., community versus long-term care). Second, epidemiologic studies vary in how they capture behaviours (e.g., direct observation of behaviours versus patient(proxy report) and the duration of the observation period. Third, a variety of approaches are used in these studies to define the specific behaviours that qualified as inappropriate. Examples of ISB include lewd or suggestive language, implied sexual acts (e.g., requesting unnecessary genital care, viewing pornography in public), and overt sexual acts (e.g., touching, grabbing, or disrobing of self or others, public masturbation).\textsuperscript{3,5,6} The St. Andrew’s Sexual Behaviour Assessment Scale (SASBA) includes four categories of ISB.\textsuperscript{7-9} Use of standardized tools to define ISB, such as the SASBA, may improve the comparability of future epidemiologic studies.

Despite variations in study methodology, several common themes emerge from published reports. First, most studies observed ISB more frequently among males with dementia as compared to females.\textsuperscript{3,5,6,10} Interestingly, nearly all of the patients included in studies describing drug treatments for sexually inappropriate behaviours have been male. Second, these behaviours appear to be more common in long-term care residents as compared to community settings in most studies.\textsuperscript{3,5} This may be due in part to the effect of direct observation by nursing home staff (versus underreporting by the family members of community-dwelling people with dementia,
who may be either unaware or embarrassed of such behaviours displayed by their relatives). In addition, nursing home residence generally suggests more advanced dementia, and most studies have found patients with more severe cognitive impairment are at greater risk of ISB. Rosen et al. provide a good discussion of the epidemiology of sexual aggression between residents in nursing homes.\textsuperscript{11} Finally, it is unclear whether inappropriate behaviours are more common in particular types of dementia. Although Alagiakrishnan et al. found patients with vascular dementia were at highest risk,\textsuperscript{6} another report by Tsai et al. found no significant differences in the rate of inappropriate behaviours among subjects with different types of dementia.\textsuperscript{12}

**PATHOPHYSIOLOGY**

Ozkan et al. provide a useful outline of the neurobiology underlying ISB, and highlight the effects of damage to four different brain regions: the frontal lobes, the temporolimbic system, the striatum, and the hypothalamus.\textsuperscript{5} Damage to the frontal system can result in disinhibition as seen in various dementias, multiple sclerosis and frontal tumours. Bardell et al. provide evidence to support the association between right frontal lobe stroke and ISB.\textsuperscript{10} Disruption of the temporolimbic system may result in hypersexual behaviours such as those observed in strokes, tumours or epilepsy involving the temporal lobes, or the Kluver-Bucy syndrome (i.e., bilateral medial temporal lobe dysfunction characterized by hypersexuality, hyperorality, emotional placidity, and an inability to recognize objects or faces). Pathology involving the striatum (seen in cases of Parkinson’s disease, Tourette’s syndrome and Huntington’s disease) may produce obsessive-compulsive features, including sexual fixations. Finally, lesions of the hypothalamus can provoke hypersexual behaviour. An example of such hypothalamic damage is the uncommon
Kleine-Levin syndrome, which is typically seen in adolescent males and involves alternating episodes of hypersomnia and hyperphagia.\textsuperscript{5}

The neurochemistry of inappropriate sexual behaviours is complex and includes androgens, serotonin, dopamine, prolactin, and hypothalamic neurotransmitters. The involvement of these neurotransmitters and hormones helps to explain some of the proposed treatments discussed in our review. Several articles discuss the pathophysiology of ISB in greater detail.\textsuperscript{5,6,10,13,14}

**REFERENCES**


14. Tsatali MS, Tsolaki MN, Christodoulou TP, Papaliagkas VT. The complex nature of inappropriate sexual behaviors in patients with dementia: can we put it into a frame? Sex Disabil 2011;29(2)143-56.