

Perspectives on the Use of Medicinal Marijuana in Children

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A recent study published in this month's *Pediatrics* by Ananth et al. provides novel insights on provider beliefs, knowledge and attitudes regarding the use of medical marijuana (MM) in children with cancer ([10.1542/peds.2017-0559](#)). Their study is extremely timely: though accessibility and public interest in MM has grown significantly in the past decade, MM use has not been accepted within the mainstream pediatric community. Until now, no study has explained why this may be the case.

The decision to use MM is understandably a difficult one, though a growing body of literature suggests numerous potential benefits (Grant et al *Open Neurol J.*2012, Lueng *JABFM* 2011). Cannabinoids (the non-psychoactive chemical ingredient in cannabis) have been shown to combat nausea, anorexia and neuropathic pain in adults (Abrams et al *Current Oncol.* 2016, Ellis et al *Neuropsychopharm.* 2008). Though no formal studies have been conducted in children, dronabinol – a synthetic cannabinoid – is frequently used in pediatric oncology and is an effective treatment for chemotherapy induced nausea and vomiting (Elder et al *J Pediatr Pharmacol Ther* 2015). Recently, MM has been shown to significantly decrease seizures in children with Dravet Syndrome (Devinisky *NEJM* 2017). New evidence also suggests that marijuana itself might be a viable treatment for pediatric blood cancers by inducing apoptosis in leukemic cells and decreasing tumor burden (Poweles *Blood* 2004, McKallip *Molec Pharm.* 2006). Thus, it is hardly surprising that childhood cancer patients and their families frequently inquire about MM (Ananth et al *Pediatrics* 2017). Perhaps for these reasons, the vast majority of pediatric providers surveyed in the study by Ananth et al, indicated that they would help pediatric oncology patients obtain access to MM and favor further research on the topic.

However, MM is not without its consequences. Short term effects of marijuana include decreased concentration, impaired motor control, delayed reaction time and altered judgement -- all of which are inherently problematic in childhood and adolescence (Schweinsburg et al *Psychiatry Res.* 2008). Many questions still exist surrounding the long term effects of marijuana on the developing prefrontal cortex, but evidence suggests that there are higher rates of psychosis in young patients predisposed to develop schizophrenia who smoke marijuana (Moore et al *Lancet* 2007).

For these reasons, the American Academy of Pediatrics (AAP) currently opposes the use of marijuana in patients up to 21 years of age. Yet, the AAP also strongly supports research on cannabinoids and acknowledges that MM may be an option for “children with life-limiting or severely debilitating conditions and for whom current therapies are inadequate” (Ammerman et al *Pediatrics* 2015).

There are currently 29 states in which MM is legal. The likelihood that children with chronic illness and their families will seek out MM increases as legal barriers continue to fall. We need to be ready to meet our

patients' questions with answers. Anath et al's findings shows us that though we may be open minded to the possibility of childhood use of MM, it is time to focus our research on the barriers that currently limit our use of this potential therapy.

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