Real-World Evidence for the Optimal Management of Opioid Use Disorder (OUD) During COVID-19 Pandemic for Patients Receiving Opioid Agonist Treatment (OAT)

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Background

COVID-19 pandemic declared by WHO as of March 11, 2020

- Less direct interactions/follow-up between patients and their health care provider
- Significant adverse effect on care to vulnerable populations
- Disruptions of usual OAT patterns of care and increase use of illicit synthetic opioids
- Increased opioid-use related deaths reported in Canada in COVID world
- Long-acting OAT may be particularly beneficial in this setting, to maintain therapeutic engagement and reduce opioid-related harms

Primary Objectives:

- To describe the real-world use and patient characteristics of patients treated with each OAT modality
- To quantify the proportion of patients who experienced fatal or non-fatal overdose events whilst on methadone, buprenorphine-containing sublingual tablets, and buprenorphine extended-release injection

Methods

- An open-label, multi-cohort, retrospective observational study
- Patients started on Opioid Agonist Treatment (OAT) as of March 11, 2020*, or thereafter

Inclusion criteria:

- Age ≥ 18 years
- Diagnosis of moderate to severe opioid use disorder
- Started OAT treatment on March 11, 2020, or thereafter, but ≥ 6 months before data collection occurs
- Not pregnant or actively planning for pregnancy at start of treatment

7 treating physicians (BC, ON):

- MD assigns to cohort on intend to treat (ITT) basis at start of treatment
- Follow-up period: 6 months from the start of drug treatment, or until occurrence of a fatal event, whichever comes first
- One-time data collection, using a standardized data collection form after 6 months on OAT
- Urine Drug Screens (UDS) collected at follow-up appointments

140 OUD cases across three cohorts, 6 months' follow-up:

- Buprenorphine extended-release injection **41 (29%)**
- Buprenorphine-containing S/L tablets **51 (36%)**
- Methadone **48 (34%)**
- Analysis based on ITT

Other study investigators | Dr Raj Klaire, Surrey, British Columbia | Dr Lori Regenstreif, Hamilton, Ontario | Dr Jaswinder Dhillon, Hamilton, Ontario | Dr Brooke Noftle, London, Ontario

* Start of pandemic-related restrictions in access to HCP

Patient Cohort Description

	Buprenorphine Extended-Release Injection	Buprenorphine-Containing S/L Tablets	Methadone	Total
Number of Patients	41	51	48	140
Age Range (**Median**)	19 – 64 (**39**)	19 – 61 (**38**)	22 – 64 (**39**)	
Gender:				
Male	26 (63%)	34 (67%)	29 (60%)	89 (64%)
Female	15 (37%)	17 (33%)	19 (40%)	51 (36%)
Stable Housing	38 (93%)	33 (65%)	24 (50%)	95 (68%)
Employment:				
Employed	17 (41%)	22 (43%)	8 (17%)	47 (34%)
Unemployed	12 (29%)	21 (41%)	23 (48%)	56 (40%)
Disability	9 (22%)	6 (12%)	15 (31%)	30 (21%)
Student	1 (2%)	1 (2%)	1 (2%)	3 (2%)
Other	2 (5%)	1 (2%)	1 (2%)	4 (3%)
Receiving Concomitant Psychosocial Support	12 (29%)	8 (16%)	10 (21%)	30 (21%)

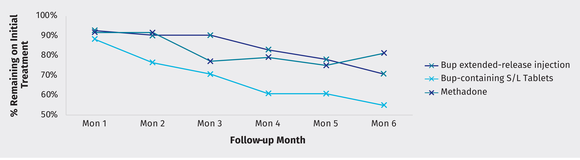
Risk Factors & Concomitant Medical Conditions

	Buprenorphine Extended-Release Injection	Buprenorphine-Containing S/L Tablets	Methadone	Total
Number of Patients	41	51	48	140
Opioid Abuse History:				
< 5 years	9 (24%)	19 (37%)	5 (10%)	33 (24%)
5 – 10 years	13 (32%)	11 (22%)	11 (23%)	55 (25%)
> 10 years	19 (46%)	21 (41%)	32 (67%)	72 (51%)
History of Injectable Opioid / Illicit Drug Use	22 (54%)	31 (61%)	42 (88%)	95 (68%)
History of Patient-Reported Overdose Events	12 (29%)	16 (31%)	16 (33%)	44 (31%)
Prior OAT Treatment	39 (95%)	33 (65%)	43 (90%)	115 (82%)
Concomitant Medical Conditions:				
HIV	1 (2%)	1 (2%)	7 (15%)	9 (6%)
HCV	7 (17%)	13 (25%)	28 (58%)	48 (34%)
Mental Health Disorder	16 (39%)	16 (31%)	24 (50%)	56 (40%)
Alcohol Use Disorder	9 (22%)	7 (14%)	7 (15%)	23 (16%)
Non-Opioid Substance Use Disorder	16 (39%)	21 (41%)	32 (67%)	69 (49%)
Chronic Pain	13 (32%)	6 (12%)	12 (25%)	31 (22%)

Patient Treatment & Retention

	Buprenorphine Extended-Release Injection	Buprenorphine-Containing S/L Tablets	Methadone	Total
Number of Patients	41	51	48	140
Dose Range	100 – 300 mg	2 – 36 mg	15 – 210 mg	-
Adherence (patients with >5 out of 6 months of documented treatment)	36 (88%)	34 (67%)	35 (73%)	105 (75%)
Retention (patients maintained on same treatment at month 6)	29 (71%)	28 (55%)	39 (81%)	96 (69%)

Patient Retention on Initial Treatment by Month of Follow-up



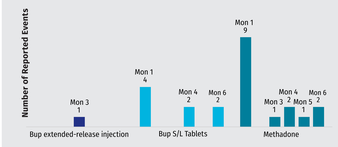
Patient Outcomes – Timing of Non-Fatal Overdose Events

	Buprenorphine Extended-Release Injection	Buprenorphine-Containing S/L Tablets	Methadone	Total
Number of Patients	41	51	48	140
Patient-Reported Non-Fatal Overdose Events:	1	8	15	24
Patients with >1 Event	1 (2%)	6 (12%)	9 (19%)	16 (11%)
Total Events	1	8	15	24

Overdose Event Incidence in the Subgroup of Patients with Prior History of Injectable Opioid Use

Treatment Cohort	Patients with ≥ 1 Event
Buprenorphine injection	1 (5%)
Bup S/L Tablets	6 (19%)
Methadone	9 (21%)

Distribution of Reported Non-Fatal Overdose Events by Month and Treatment Cohort



Patient Outcomes on Treatment Over 6-Month Follow-up

	Buprenorphine Extended-Release Injection	Buprenorphine-Containing S/L Tablets	Methadone	Total
Number of Patients	41	51	48	140
Concurrent Substance Abuse:				
Self-Reported Opioid/Illicit Drug Use	24 (59%)	33 (65%)	45 (94%)	102 (73%)
Urine Positive for Fentanyl	13 (32%)	15 (29%)	35 (73%)	63 (45%)
Urine Positive for Non-Fentanyl Substance	22 (54%)	32 (63%)	38 (79%)	92 (66%)
Urine Positive for Illicit Substance	21 (51%)	34 (67%)	38 (79%)	93 (66%)
Urine Positive for Any Substance	22 (54%)	34 (67%)	39 (81%)	95 (68%)
Patient Status at 6 Months:				
Alive	35 (85%)	32 (63%)	39 (81%)	106 (76%)
Lost to Follow-up	6 (15%)	19 (37%)	9 (19%)	34 (24%)
Deceased	-	-	-	-

Conclusions

In this observational cohort, use of buprenorphine extended-release injection is associated with a reduction in documented drug-related overdoses as compared with the use of other standard OAT modalities, especially with the use of methadone.

Some potential patient selection bias was noted for the buprenorphine extended-release injection group:

- Less prior history of injectable opioid/illicit drug use
- More stable housing
- Unmeasured selection bias for selection of buprenorphine extended-release injection as a treatment modality

Differences in outcomes were noted between the 3 groups, and between methadone and SL buprenorphine in terms of adherence, retention in treatment, and illicit drug use during treatment.

Buprenorphine extended-release injections may present a unique option in terms of maintenance of engagement in care and reduction of drug-related harms.

These observations warrant confirmation in a validation cohort.

Disclosures

Kenneth Lee
- Honoraria - Indivior, Knight; intends to make therapeutic recommendations for medications that have not received regulatory approval (ie, off-label use of medications)

Christopher Fraser
- Honoraria – Gilead, Indivior, ViiV; Advisory Boards – Gilead, Indivior; Funded Grants, Research or Clinical Trials – AbbVie, Canadian HIV Trials Network, Gilead, Merck, ViiV; intends to make therapeutic recommendations for medications that have not received regulatory approval (ie, off-label use of medications)

Tazmin Merali
- Study management and coordination – Drug Intelligence Inc

Marie-Christine Mormont
- Indivior employee, stock options owner

Brian Conway
- Honoraria – AbbVie, Gilead, Indivior, Merck; Advisory Boards – AbbVie, Gilead, Merck; Funded Grants, Research, or Clinical Trials – AbbVie, Gilead, Indivior, Merck, Roche; intends to make therapeutic recommendations for medications that have not received regulatory approval (ie, off-label use of medications)

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