Original Research Paper

Volume - 13 | Issue - 10 | October - 2023 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Anaesthesiology

EFFICACY OF DEXMEDETOMIDINE AS A PREMEDICATION WITH KETAMINE, PROPOFOL AND KETOFOL FOR BURN DEBRIDEMENT AND DRESSINGS

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ABSTRACT **Introduction** Burn injury causes inflammation initially resulting into cascade causing sensitization and stimulation of pain fibers which leads to development of chronic pain. Pain management in burn patient during different procedure plays key role in preventing chronic pain development. Dexmedetomidine can be used as premedication with Propofol, Ketamine and Ketofol to reduce side effect and requirement of drugs, and better management of pain in burn patients. **Aims And Objectives** Provide analgesia and anaesthesia in dressing and debridement of burns patients and evaluate effect of dexmedetomidine as premedication with Ketamine, Propofol and Ketofol. **Material And Methodology** 60 burns patients posted for dressing, debridement and other small procedures were divided into 3 groups[Group-P-Propofol(n=20), Group-K-Ketamine(n=20) and Group-KP-Ketofol(n=20)]. Dexmedetomidine(1mcg/kg) was given as premedication 10min before induction. Induction done in Group-P-Propofol(2mg/kg), Group-K-Ketamine(2mg/kg) and Group-KP-Ketofol(2mg/kg) and maintained with infusion. Airway maintained with simple O2 mask and 100% O2 through Bain's circuit if needed. **Observation And Result** Intraoperatively PR was significant in Group-P after 10min(p-0.0459) and 20min(p-0.0425) with 01/20patient observed bradycardia(PR<45/min). SBP, DBP and MAP was significantly decreased in Group-P. No significant changes were observed in RR in any groups but in Group-P(02/20) and Group-KP(01/20) patients observed Respiratory depression requiring 100%O2 with bain's circuit. MOASS(sedation score) was significant between all 3 groups at 20min intraoperatively(p-0.0187) and postoperatively at 0min(p<0.0001), 10min(p<0.0001) and 20min(p-0.00496) with delayed recovery in Group-K. VAS(p-0.0002) and patient satisfaction score(p-0.0328) was significant between groups. **Conclusion** Dexmedetomidine decreases requirement of drugs with better hemodynamic. Intraoperatively hypotension, bradycardia and respiratory depression was significantly decreased in Group-P. Postoperatively delayed recovery, emergence agitation, PONV and dizziness was significant in Group-K. VAS and Patient satisfaction score was comparably lower in Group-K and Group-P.

KEYWORDS : Burns, Premedication, Dexmedetomidine, Ketamine, Propofol, Ketofol, Analgesia, Dressing and debridement

INTRODUCTION

Pain management must be a foundation of burn care. Good pain control is linked to better wound healing, sleep, participation in activities of daily living, quality of life and recovery – said by Raymond in 2004, Christian in 2006. [8]

Acute burn injury leads to initial inflammatory phase which stimulates pain fibers. Initial nociceptive pain is because of irritants and sensitization which if not treated can leads to chronic pain development. Subsequent procedure like dressing, debridement and skin grafting should be done with adequate pain management to prevent development of chronic pain, depression and psychological issues in burn patients. All these procedures may require operative room to provide sedation with analgesia and anxiolysis.

Dexmedetomidine is α_2–agonist. Centrally acting sympatholytic, analgesic and sedative drug. Dexmedetomidine (1µg/kgIV over 10min) as premedication in burn patients during procedural sedation reduces requirement of other drugs, attenuates sympathetic response, provides hemodynamic stability, analgesia and also has good recovery profile as observed in previous clinical studies. [1]

Dexmedetomidine as premedication with propofol antagonize side effects i.e. myocardial depression, metabolic acidosis, extended recovery associated with large dose administration; with ketamine helps to decrease the pressure response to intubation, and reduces psycho-mimetic effects and with ketofol lower the incidence of agitation, more patient satisfaction, and decrease heart rate and blood pressure – as evaluated in study conducted for ECT. [3][7][2]

There are studies available to evaluate effect of dexmedetomidine as premedication with ketamine, propofol and ketofol in procedure other than burns patients. Here in this study we will evaluate dexmedetomidine as premedication with these drugs for procedural pain management in burn patients assuming that it may reduce the requirement of propofol, ketamine and ketofol, with stable intraoperative hemodynamics, sedation, analgesia and faster postoperative recovery for procedures like debridement and dressing changes in burns patients.

AIMS

Our Aim is to provide analgesia and anesthesia in dressing and debridement of burns patient.

OBJECTIVES

Primary Objective

Primary objective is to evaluate the effect of Dexmedetomidine as premedication on requirement of Propofol, Ketamine and Ketofol.

Secondary Objective

- Adequate sedation
- Analgesia
- Decrease anxiety
- Preservation of Respiratory reflexes
- Hemodynamic stability
- Avoidance of post-operative nausea and vomiting
- Attenuation of psychomimmetic effects like hallucination, confusion, and agitation
- Patient satisfaction by analgesic treatment
- Reduction in requirement of drug
- Faster post-operative recovery

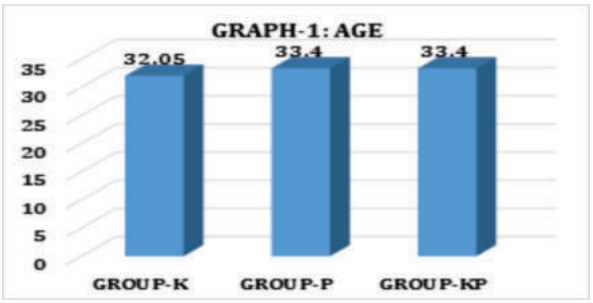
MATERIAL AND METHODOLOGY

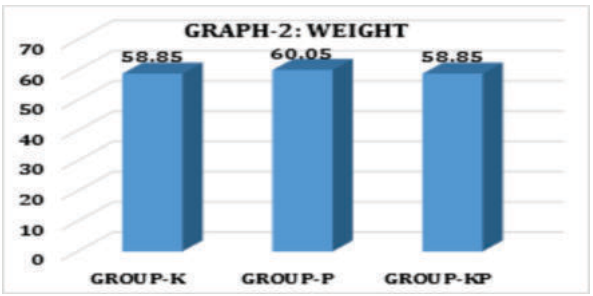
- This is prospective randomized single blinded study done in Plastic surgery operation theatre B.J. Medical college and civil hospital Ahmedabad. After ethical approval 60 burns patients between 18-60 age group, ASA physical status of I, II & III posted for dressing, debridement and short procedures like skin grafting (STG). Patients with major uncontrolled psychiatric, cardiovascular, respiratory, other systemic diseases, burn area of >50% and haemodynamically unstable patients were excluded from the study.
- A day before surgery, all patients were evaluated for pre-anaesthetic check-up (PAC). Detailed history, examination, baseline vitals, SpO_2 and APAIS (anxiety scale), Routine investigations were noted.
- On the day of surgery, after reviewing the case for NPO, investigations and advices, informed & written consent obtained from the patient and relative.
- In operation theatre, monitor - ECG, SpO_2 and Non-Invasive Blood Pressure (NIBP), $EtCO_2$ attached and baseline readings recorded. Baseline urine output and APAIS also noted; and IV line secured.

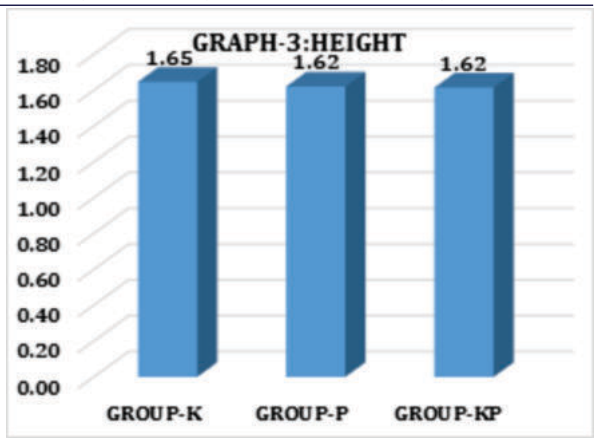
- Patients were given premedication Inj. Ondansetron 0.15mg/kg intravenously(IV) and Inj. Dexmedetomidine 1µg/kg (10cc dilutionIV slowly over 10min) 10minutes prior to induction [1] Followed by induction in Group-P with Inj.Propofol(1%) 2mg/kgIV over 30sec [3], Group-K Inj.Ketamine 2mg/kgIV over 20sec [Available as 50mg/ml vial - 100mg ketamine (2cc) + NS (8cc) =10mg/ml (Total 10cc)] [3] and Group-KP Inj.Ketofol 2mg/kg [Prepared in ratio of 1:1 - 10 ml syringe take 50mg Ketamine(1ml)+50mg of Propofol(1%)(5ml) dilute till 10cc-Ketofol containing 5mg/ml of each drug]. [3] Time needed for loss of verbal contact and loss of eyelash reflex was noted.
- Maintenance of anaesthesia done with in Group P- Propofol infusion-50µg/kg/minIV [11], Group K-Ketamine infusion- 10-30µg/kg/minIV[9] and Group KP-Ketofol Infusion– (1:1) 100µg/kg/minIV [10]. MOASS of 0-1 achieved with infusion and any alteration in HR, BP or movement was managed with changing infusion rate.
- Oxygen given with simple O_2 mask 5-6liter/min if required with 100% Oxygen through bain's circuit at 6-8 lit/min and if SpO_2 <90% Laryngeal Mask Airway (LMA) or Endotracheal Tube (ETT) was inserted after giving Inj. Scoline 1.5-2mg/kg IV.
- If MAP(Mean Arterial Pressure) is <60mmHg- Inj.Phenylephrine 50-100µgIV and if HR(Heart Rate) is <45bpm Inj.Atropine 0.6mgIV will be administered as rescue drug. [5]
- IV Fluids Crystalloids 6-8ml/kgIV given [7]
- Infusion of drug stopped at the end of surgical procedure and time noted. Total drug consumption, recovery time (Discontinuation of drugs to achievement of MOASS-3) was also noted. [1] Post-operatively vitals, SpO_2, Anxiety score, VAS score, MOASS and other complications were noted in post anesthesia care unit(PACU). Inj.Dexamethasone 4-8mgIV for PONV and Inj.Paracetamol 10-15mg/kgIV if post-operative VAS is >4 was given. Shifted to ward once aldrete recovery score-09 is achieved.

RESULT AND DISCUSSION

We observed the following findings with the demographic data in all three groups.







No statistically significant difference was observed in all demographic data like age, gender, height, weight, ASA status and type of surgery.

In our study total duration of procedure(minutes) in Group-K-16.5±5.95, Group-P-16.2±8.28 and in Group-KP-16.25±8.63 was observed with no significant between the groups(p-0.7218). In previous study conducted by **Gunduz M et al**[13] for burn dressing changes, mean total duration of procedure was observed between 18-22 minutes. Duration can be affected by type of surgery performed. In our study major procedure done-dressing, debridement, STG and amputation.

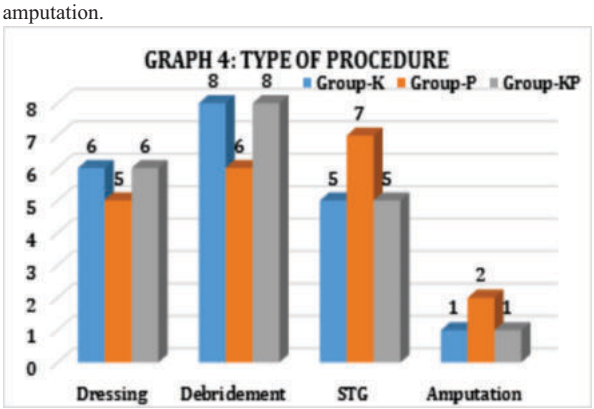


Table No.1: Time For Loss Of Verbal Command And Eyelash Reflex After Induction(seconds)

	TIME FOR LOSS OF VERBAL COMMAND	TIME FOR LOSS OF EYELASH REFLEX
GROUP-K(n=20)	44.2±1.75	53.15±2.05
GROUP-P(n=20)	32.2±1.96	38.5±2.01
GROUP-KP(n=20)	33.15±2.23	38.95±2.81
P VALUE	0.0071	0.0035

Aboeldahab H et al (2011) [3] observed significant difference in time needed for loss of verbal command and eyelash reflex with maximum values observed in Ketamine group compare to propofol and ketofol group. This study was done without premedication with dexmedetomidine.

Table No. 2: Pulse Rate(bpm) Changes-pre-, Intra And Post-operative

TIME	GROUP-K(n=20)		GROUP-P(n=20)		GROUP-KP(n=20)		BETWEEN THREE GROUP (P-VALUE)
	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	
BASELINE	97.8±15.36		98.8±15.31		98.85±18.17		0.9741
PREMED	93.9±14.93	0.4206	94.35±14.69	0.3544	93.2±18.02	0.3298	0.9740
10 MIN	96.4±15.71	0.7773	89.75±13.64	0.0459	93.25±18.01	0.3340	0.2180
20 MIN	96.7±15.01	0.8203	89.15±13.70	0.0425	93.75±16.92	0.3643	0.2972
30 MIN	96.85±14.72	0.8428	93.7±13.97	0.2783	95.05±17.19	0.5012	0.8098
45 MIN	96.45±14.76	0.7785	94.15±15.03	0.3430	92.85±17.39	0.3940	0.8778
60 MIN	93.22±16.62 (n=09)	0.4937	89.27±16.27 (n=10)	0.1274	93.2±16.79 (n=11)	0.3394	0.8530

POST-OPERATIVE							
0 MIN	96.15±13.70	0.7220	93.05±15.33	0.2429	93.75±18.48	0.4370	0.8132
10 MIN	96.5±15.29	0.7900	91.55±13.51	0.1208	94.8±19.31	0.5577	0.6208
20 MIN	96.95±14.87	0.8598	92.15±14.69	0.1693	95.75±18.12	0.6559	0.6157
30 MIN	96.05±15.21	0.7194	92.8±15.08	0.2195	94.8±17.89	0.5419	0.8136
45 MIN	98.18±13.61 (n=11)	0.9438	85.50±8.54 (n=04)	0.0428	91±12.38 (n=04)	0.3302	0.8231

Intra-operative PR<45 bpm observed in Group-P-01/20(5%) patients at 10min after giving premedication with dexmedetomidine, which was treated with inj.Atropine 0.6 mg IV.Maximum rise of PR compare to baseline was observed in ketamine group.

Dexmedetomidine as pre-medication prior to ketamine attenuates sympathomimetic activity of ketamine. Dexmedetomidine as premedication with propofol has synergistic effect on heart rate[16].

In study conducted by **Aboeldahab H et al (2011)** [3] observed from baseline, decrease in PR in propofol group, increase in PR in ketamine group and comparable in ketofol group after induction. After intubation PR was comparable to baseline in all groups. This study was conducted without premedication with dexmedetomidine. **Kang W S et al**[7] observed significant reduction in HR from baseline at induction, incision and 30min after incision in dexmedetomidine with propofol group ($p<0.05$).

Table No. 3: Sbp(mmhg) Changes- Pre-, Intra And Post-operatively

TIME	GROUP-K(n=20)		GROUP-P(n=20)		GROUP-KP(n=20)		BETWEEN THREE GROUP (P-VALUE)
	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	
BASELINE	131.80±8.66		132.75±10.32		131.95±17.00		0.9387
PREMED	127.55±9.15	0.1397	126.30±10.09	0.0529	126.55±15.13	0.2955	0.1377
10 MIN	129.60±8.98	0.4347	121.90±13.69	0.0076	126.70±13.19	0.2826	0.0370
20 MIN	130.55±8.26	0.6450	119.35±14.03	0.0017	124.25±16.41	0.1534	0.0758
30 MIN	129.75±8.43	0.4529	120.55±13.96	0.0034	124.50±14.41	0.1434	0.0132
45 MIN	130.05±8.13	0.5141	119.50±11.49	0.0005	126.90±13.35	0.3033	0.7427
60 MIN	126.22±6.15 (n=09)	0.0694	123.27±11.79 (n=11)	0.0380	125.85±9.26 (n=10)	0.1934	0.2341
POST-OPERATIVE							
0 MIN	128.85±8.03	0.2712	127.75±9.68	0.1224	127.10±14.89	0.3435	0.8840
10 MIN	128.90±8.65	0.2961	126.05±9.20	0.0367	127.55±15.33	0.3957	0.7354
20 MIN	129.05±8.48	0.3168	126.15±9.76	0.0394	127.15±14.57	0.3440	0.7041
30 MIN	129.50±8.90	0.4127	126.90±9.20	0.0734	128.00±15.61	0.4489	0.7840
45 MIN	98.18±13.61 (n=11)	0.0906	111.00±14.26 (n=04)	0.0581	132.50±10.75 (n=04)	0.9360	0.7234

Maximum fall of SBP(mmHg) observed in Group-P-40 compare to Group-K-12 and Group-KP-28. Maximum rise of SBP observed more in Group-KP-10 compare to Group-K-08 and Group-P-02. In study conducted by Gupta K et al (2011)[4] significant reduction in SBP was observed after premedication with dexmedetomidine with ketamine induction at time of premedication and induction with p-0.007 and p-0.004. Gundzuz M et al (2017)[13] in study with ketamine based induction for burn dressing changes, observed significantly reduction in SBP from baseline after premedication with dexmedetomidine ($p<0.05$) as compare to midazolam premedication.

Table No. 4: Dbp(mmhg) Changes-pre-, Intra And Post-operatively

TIME	GROUP-K(n=20)		GROUP-P(n=20)		GROUP-KP(n=20)		BETWEEN THREE GROUP (P-VALUE)
	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	
BASELINE	80.60±7.39		81.20±9.38		80.75±11.69		0.9806
PREMED	77.45±6.86	0.1707	75.50±8.98	0.0572	76.60±11.50	0.2859	0.8059
10 MIN	79.90±7.82	0.7727	75.35±11.38	0.0846	77.00±12.63	0.3306	0.3997
20 MIN	79.30±7.99	0.5964	71.55±9.77	0.0029	76.30±12.57	0.3276	0.6485
30 MIN	79.75±8.08	0.7305	70.35±11.16	0.0020	78.80±12.26	0.7351	0.0139
45 MIN	79.90±7.17	0.7628	73.90±9.77	0.0209	77.70±11.79	0.6063	0.1650
60 MIN	79.67±7.04 (n=09)	0.7491	72.36±9.37 (n=11)	0.0204	78.77±13.42 (n=10)	0.6492	0.1933
POST-OPERATIVE							
0 MIN	78.50±8.03	0.3639	80.80±9.71	0.8953	76.15±12.46	0.2517	0.3453
10 MIN	78.70±8.65	0.3905	80.05±8.97	0.6943	76.40±11.86	0.2668	0.4638
20 MIN	78.75±8.48	0.4418	77.00±10.71	0.1953	76.70±11.97	0.3026	0.7935
30 MIN	79.25±8.90	0.5690	78.20±10.19	0.3391	77.50±12.27	0.4125	0.7935
45 MIN	80.00±7.95 (n=11)	0.8172	78.00±9.65 (n=04)	0.2304	78.75±20.12 (n=04)	0.8588	0.8610

Table No. 5: Map(mmhg) Changes- Pre-, Intra And Post-operative

TIME	GROUP-K(n=20)		GROUP-P(n=20)		GROUP-KP(n=20)		BETWEEN THREE GROUP (P-VALUE)
	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	MEAN±SD	WITHIN GROUP TO BASELINE (P-VALUE)	
BASELINE	97.67±6.88		98.38±8.21		97.82±12.63		0.9758
PREMED	94.15±6.79	0.1113	92.43±8.22	0.1277	93.25±12.75	0.2699	0.8642
10 MIN	96.47±7.45	0.5942	90.87±10.62	0.0170	93.57±12.26	0.2891	0.1965
20 MIN	96.38±7.12	0.5656	87.48±9.72	0.0005	92.28±11.79	0.1288	0.0351
30 MIN	96.42±7.31	0.5810	87.08±10.56	0.0006	94.03±13.42	0.2523	0.0180
45 MIN	96.62±6.60	0.6253	89.10±8.79	0.0014	94.10±11.94	0.2561	0.0411

60 MIN	95.19±6.75 (n=09)	0.3183	89.33±8.47 (n=11)	0.0093	87.71±13.45 (n=10)	0.4275	0.6394
POST-OPERATIVE							
0 MIN	95.28±6.51	0.2637	96.45±7.85	0.4514	93.13±12.37	0.2586	0.2353
10 MIN	95.43±6.39	0.2871	95.38±7.03	0.2223	93.45±12.37	0.2915	0.2134
20 MIN	95.52±6.18	0.3302	93.38±8.03	0.0590	93.52±12.01	0.2925	0.4231
30 MIN	96.00±6.90	0.4466	94.43±7.97	0.1311	94.33±12.68	0.4043	0.2391
45 MIN	95.94±6.82 (n=11)	0.4307	91.83±8.04 (n=04)	0.2093	96.67±16.28 (n=04)	0.9041	0.5123

Intra-operatively, Maximum fall of MAP(mmHg) observed more in Group-P-33 compare to Group-KP-20 and Group-K-06. Maximum rise of MAP observed equally in Group-K-03 and Group-KP-03.

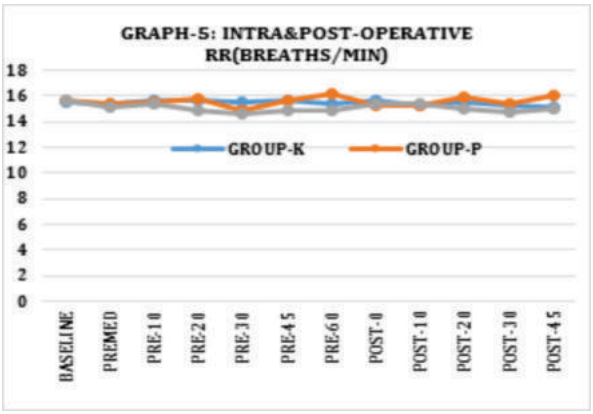
Intra-operative hypotension(MAP-60-90mmHg) observed in Group-P [02/20(10%) at 10min and 20min] and Group-KP [05/20(5%) at 20min] required fluid bolus and inj.mephenteramine-6mg IV.

In study conducted by Aboeldahab H et al (2011) [3] observed reduction in MAP in propofol group, increased in ketamine group and comparable to baseline in ketofol group. This study was done without dexmedetomidine premedication. In this study, MAP in ketamine was higher as compare to other two groups after induction and intubation time. Kang W S et al[7] observed reduction of MAP from baseline during induction, incision, 30min after incision and during extubation in dexmedetomidine group with ketofol ($p<0.05$) as compare to only ketofol group.

Significant difference was observed between two groups in MAP during in induction, intubation, incision, 30min after incision and during extubation ($p<0.05$). Pushkarna G et al [15] observed decrease in MAP from baseline in propofol-dexmedetomidine group as compare to propofol-midazolam group.

Maximum fall of blood pressure observed in Group-P. Propofol induces hypotension, which is attenuated by premedication with dexmedetomidine. Dexmedetomidine nullifies ketamine induce hypertension which is observed by SBP comparable to baseline in Group-K.

Factors contributing to Hypotension:-Pre-operative NPO duration, type of surgery, burn area, type & duration of procedure and total drug used.

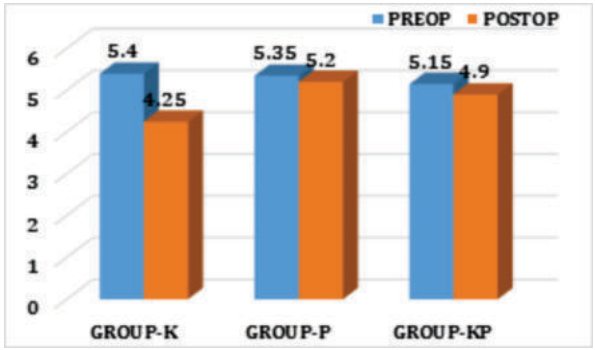


Respiratory depression(RR<10breaths/min)-Group-P[02/20(10%)] and Group-KP [01/20(5%)] required mask ventilation with 100% O2 at 6-8lit/min flow.

Intra- and post-operatively in SpO_2 from baseline and between the groups no statistically significant difference observed in all groups except in Group-P 10min(p-0.0317) post-operatively. SpO_2<95% observed in Group-P[02/20(10%)] and Group-KP[01/20(5%)] required mask ventilation with Bain's circuit.

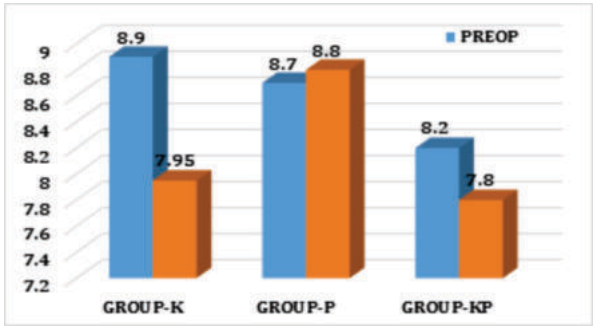
Intra- and post-operatively in $EtCO_2$ (from baseline) within the group and between the group no statistically significant difference noted except at 10 min in Group-K(p-0.0050) and Group-P(p-0.0300) post-operatively.

Intra-operatively and Post-operatively MOASS was statistically significant between all three groups at 20min(p-0.0187) and 0min($p<0.0001$), 10min($p<0.0001$), 20min(p-0.0496) respectively.



Graph-6: Intra&post-operative Vas Score

Post-operatively VAS score was significantly lower in Group-K(4.28±0.92) as compare to Group-KP(4.88±0.78) and Group-P(5.28±0.84). VAS score>5 noted in Group-P-06/20(30%) and Group-KP 02/20(10%) which was treated with inj.paracetamol-15mg/kgIV. Gunduz M et al (2020) observed in their study that VAS score was significantly low in dexmed-ketamine group as compare to midazolam-ketamine group. Dexmedetomidine have analgesic effect by dose dependent direct inhibition of C and Aα fibres and inhibits nociceptive neurotransmission through the posterior horn of spinal cord[16].

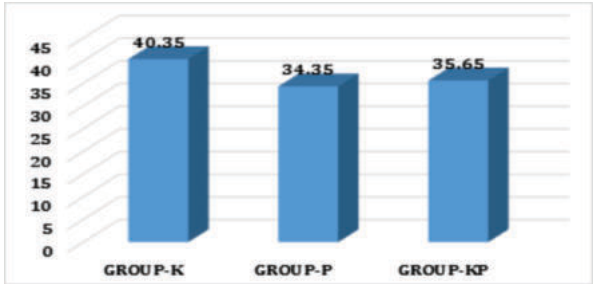


Graph-7: Intra&post-operative Anxiety Score

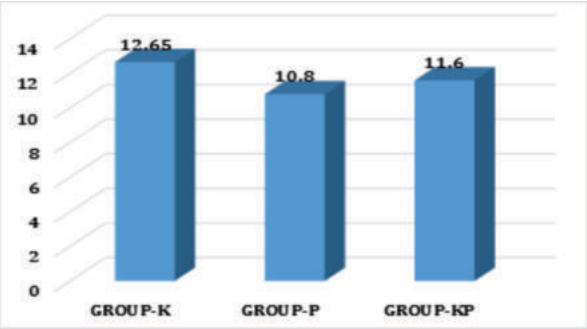
Anxiety score, within the group was significantly(p-0.0217) lower in Group-K post-operatively(7.88±1.76) compare to pre-operatively(8.92±1.28) and between the group significantly(p-0.0038) lower in Group-KP(7.28±2.03) compare to Group-K(7.88±1.76) and Group-P(9.04±1.62) post-operatively.

Table No.6: Total Drug Used(mean±sd)

	TOTAL DRUG USED (mg)
GROUP-K(n=20)	135.25±14.01
GROUP-P(n=20)	139.35±17.37
GROUP-KP(n=20)	135.3±18.12

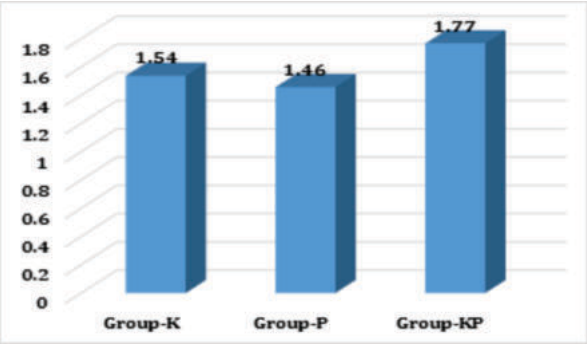


Graph-8: Adrete Score Between The Group(p-0.0024)



Graph-9: Recovery Time Between The Group(p-0.0143)

In our study, mean recovery time observed longest in Group-K(12.65±1.31) as compare to Group-KP(11.6±1.72) and Group-P(10.8±1.19). It was statistically significant between three groups(p-0.0015) and late recovery observed in Group-K. Ravipati P et al[1] observed late recovery in ketofol group alone in compare to ketofol-dexmedetomidine group(p-0.0006). In this study Ramsay Sedation Score was taken to see recovery whereas in our study MOASS is taken. Discrepancy in recovery time is attributed to longer duration of action of ketamine(5-10min) as compare to propofol(2-3min).



Graph-10: Patient Satisfaction Scale(p-0.0328)

Table No.7: Complications

	GROUP-K(n=20)	GROUP-P(n=20)	GROUP-KP(n=20)
INTRA-OPERATIVELY			
RESPIRATORY DEPRESSION	00	02/20(10%)	01/20(5%)
BRADYCARDIA	00	01/20(5%)	00
HYPOTENSION (MAP 60-70mmHg)	00	02/20(10%)	01/20(5%)
POST-OPERATIVELY			
PONV	02/20(10%)	00	00
VAS>5	00	06/20(30%)	02/20(10%)
Hallucinations	05/20(25%)	00	02/20(10%)
Dream like state	04/20(20%)	00	01/20(5%)
Irrelevant talk	07/20(35%)	00	01/20(5%)
SpO2 (<95%)	00	02/20(10%)	00
Shivering	00	02/20(10%)	01/20(5%)
Dizziness	09/20(45%)	NONE	03/20(15%)

Table No.8: Emergence Agitation Score

GROUP-K (n=20)	2.45±1.10
GROUP-P (n=20)	1.35±0.49
GROUP-KP (n=20)	1.8±0.77
P VALUE	0.0003

Gupta K et al[7] observed decrease in psychomimmetic symptoms of ketamine after premedication with ketamine with mild to moderate grade. **Shams T et al (2014)** [12] observed **agitation score>2** significantly lower in ketofol-dex group(02/20-1.4%)

PONV observed in Group-K-02/20(10%)-treated with inj. Dexamethasone-8mg IV. **Pushkarna G. et al (2019)** [15] observed higher incidence of PONV in dexmedetomidine group (07/60) compare to midazolam(02/60) with propofol. Propofol has intrinsic anti-emetic effect which prevent PONV as compare to ketamine.

CONCLUSION

We observed from our study results that dexmedetomidine as premedication with ketamine, propofol and ketofol has better hemodynamic stability, analgesia, sedation and patient satisfaction. Blood pressure decreased after dexmedetomidine but when compared with all three groups, fall in blood pressure was maximum in propofol group and comparable to baseline in ketofol and ketamine group. Ketamine provided better analgesia and relief of anxiety but had longer recovery profile and post-operative complications like psychomimmetic symptoms and PONV. Ketofol provide intermediate recovery with less postoperative complications when given with dexmedetomidine in burn patients.

Abbreviations

IV	Intravenously
PONV	Post-Operative Nausea Vomiting
PR	Pulse Rate
HR	Heart Rate
NIBP	Non Invasive Blood Pressure
SpO2	Oxygen Saturation
SBP	Systolic Blood Pressure
DBP	Diastolic Blood Pressure
MAP	Mean Arterial Pressure
RR	Respiratory Rate
MOASS	Modified Observer's Assessment of Alertness/Sedation Scale
APAIS	Amsterdam Preoperative Anxiety and Information Scale
VAS	Visual Analogue Scale
STG	Split Screen Graft
BMI	Body Mass Index
RSS	Ramsay Sedation Score
IM	Intra-muscular

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