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Comparing Dexmedetomidine and Propofol for Sedation in the ICU as Regards Hemodynamics, Richmond Agitation Sedation Scale (RASS) and Motor Activity Assessment Scale (MAAS) and Total ICU Stay

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Abstract

Background: The choice of sedative agents in intensive care units (ICU) can significantly impact patient outcomes.

Aim of Study: This study aimed to compared the effects of dexmedetomidine versus propofol on hemodynamic parameters, sedation levels, and ICU length of stay.

Patients and Methods: A randomized controlled trial was conducted with 30 ICU patients divided into two equal groups (n=15 each): Dexmedetomidine group and propofol group. Hemodynamic parameters, sedation scores using the Richmond Agitation Sedation Scale (RASS) and Motor Activity Assessment Scale (MAAS), and ICU length of stay were measured and compared between groups.

Results: The dexmedetomidine group showed significantly lower heart rates (62.60 vs 76.07 bpm, $p<0.05$) and higher blood pressure values (systolic: 110.00 vs 93.33mmHg; diastolic: 72.00 vs 62.00mmHg, $p<0.05$) compared to the propofol group. CVP was significantly higher in the dexmedetomidine group (13.67 vs 3.47, $p<0.05$), while blood oxygen saturation remained comparable between groups (97.20% vs 97.40%, $p=0.742$). RASS scores indicated deeper sedation in the dexmedetomidine group ($p<0.001$), while MAAS scores showed higher motor activity compared to the propofol group ($p<0.001$). Notably, the dexmedetomidine group demonstrated significantly shorter ICU length of stay compared to the propofol group ($p<0.001$).

Conclusion: Dexmedetomidine demonstrated more stable hemodynamicparameters, effective sedation, and shorter ICU stays compared to propofol. These findings suggest that dexmedetomidine may be a preferable sedative agent for ICU patients, potentially leading to improved clinical outcomes and resource utilization.

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Key Words: *Dexmedetomidine – Propofol – ICU sedation – Hemodynamics – Length of stay – RASS – MAAS.*

Introduction

SEDATION is an integral part of critical care management in the Intensive Care Unit (ICU). It involves the administration of medications to induce a state of reduced consciousness and promote patient comfort, alleviate anxiety, facilitate medical procedures, and optimize patient-ventilator synchrony. The goals of sedation in the ICU include maintaining patient comfort, reducing pain and agitation, preventing self-inflicted harm, and ensuring cooperation with medical interventions **[1,2].**

In the Intensive Care Setting, sedation is commonly required for patients undergoing mechanical ventilation, invasive procedures, or those with acute respiratory distress, severe pain, or agitation. Sedatives are administered to achieve the desired level of sedation, which can range from light sedation with patient responsiveness to deep sedation with complete unresponsiveness **[2].**

The choice of sedative agents in the ICU depends on various factors, including the patient's clinical condition, the intensity of sedation required, anticipated duration of sedation, and potential adverse effects of the medications. Commonly used sedatives in the ICU include benzodiazepines such as midazolam and lorazepam, propofol, dexmedetomidine, and opioids **[3].**

Benzodiazepines have been widely used for ICU sedation due to their sedative, anxiolytic, and amnestic properties. However, their use is associated with potential drawbacks such as prolonged sedation, accumulation of active metabolites, respiratory depression, and increased risk of delirium **[4].**

Propofol is an intravenous sedative-hypnotic agent, provides rapid onset and offset of sedation and allows for easy titration. It has been commonly used for short-term sedation in the ICU, particularly for patients requiring mechanical ventilation. Propofol offers a smooth awakening profile but is associated with risks of hypotension, propofol infusion syndrome (in prolonged use or high doses), and respiratory depression [3].

Dexmedetomidine, a selective alpha-2 adrenergic agonist, has gained popularity as a sedative agent in the ICU. It provides sedation with the advantage of preserving patients' arousability and cooperation. Dexmedetomidine offers analgesia, anxiolysis, and sedation without significant respiratory depression. It is known for its sympatholytic and hemodynamic-stabilizing effects, making it suitable for patients with hemodynamic instability or those requiring spontaneous breathing trials [5].

The choice of sedative agent in the ICU is often guided by individual patient characteristics, the desired depth of sedation, the need for analgesia, the anticipated duration of sedation, and the presence of organ dysfunction. Various sedation scales, such as the Richmond Agitation-Sedation Scale (RASS) and the Sedation-Agitation Scale (SAS), are used to assess and monitor the level of sedation in the ICU [6].

To optimize patient outcomes, sedation protocols and guidelines have been developed to promote appropriate sedation levels, minimize the duration of mechanical ventilation, reduce the incidence of delirium, and enhance early mobilization and patient recovery. Ongoing research continues to explore new sedative agents, sedation strategies, and individualized approaches to sedation management in the ICU [7].

Sedating ventilated patients is a common practice in intensive care units (ICUs) to ensure their comfort, reduce anxiety, and facilitate mechanical ventilation. The goal of sedation is to achieve a state of calmness and relaxation while maintaining patient safety and allowing them to tolerate invasive procedures and therapies [3].

The selection of sedative medication in mechanically ventilated patients depends on several factors, including the patient's clinical condition, sedation goals, desired level of sedation, potential side effects, and individual patient factors such as age, comorbidities, and pharmacokinetics [8].

Previous studies were investigated the use of dexmedetomidine in the ICU showed potential benefits of Dexmedetomidine in terms of reduced length of stay that should to be considered [4,6]. So our study focuses on the comparison between dexmedetomidine and propofol for sedation in the ICU as regards hemodynamics, RASS, MAAS and total ICU stay.

Material and Methods

This study was dedicated to compare Dexmedetomidine and Propofol for sedation in the ICU as regards hemodynamics, RASS, MAAS and total ICU stay. The study was conducted at the intensive care units of specialized heart center.

It is A convenient sample of (30 patients) who presented in ICU included in the study based on the sampling formula (n = (z2p(1-P)/d2). The study sample participants were allocated randomly (1) patient for the group (A) and (1) patient the group (b) by a 1:1 ratio. The patients were randomly divided into two groups, Group A (Propofol group) and Group B (dexmedetomidine group) using the sealed envelope method of randomization. Each group included 20 patients. The Patients aged older than 18 years old and below 70 years old and the Patients in ICU classified according to RASS from +1 to +4 score were included in the study sample.

We excluded the patients withaged less than 18 years old and above 70 years old, the patients who have any reactions to propofol or dexmedetomidine and the Pregnant patients and the patients on Chronic opioid use (addicts, cancer patients receiving palliative treatment, Patients with ASA classification III or more: Patients with life threatening medical conditions, for example: Recent myocardial infarction, sepsis, severe cardiac valve dysfunction also the Patients with coagulopathy or full anticoagulationwere excluded.

All Patients had a pre-assessment report, which will include; history taking, complete physical examination and review of all the results of the routine investigations (CBC, Coagulation profile, renal functions, liver functions, electrolytes).

The Primary Outcome Measures: Hemodynamics: This would include monitoring key parameters as: Heart rate, Blood pressure (systolic and diastolic), Central Venous Pressure (CVP), Blood Oxygen Saturation, Richmond Agitation-Sedation Scale (RASS) scores and Motor Activity Assessment Scale (MAAS) scores.

The Secondary Outcome Measures: Total ICU Stay: Length of stay in the ICU for patients receiving dexmedetomidine versus propofol, which could reflect recovery speed and resource utilization.Adverse Events: Tracking any adverse effects related to sedation, such as respiratory depression, hypotension, or other complications.Patient Comfort and Satisfaction: Assessing patient-reported outcomes related to comfort during sedation, possibly through questionnaires. Incidence of Delirium: Evaluating the occurrence of delirium during or after sedation, which could provide insights into the cognitive effects of each sedative.

Statistical analysis:

The data was analyzed and presented as mean, standard deviation SD, median and standard error of the mean SEM. The two studied groups were compared Chi-Square for categorical variable, and Mann Whitney U test for continuous variables. $p<0.05$ were considered significant.

Results

Regarding demographic data,the patients in the dexmedetomidine group have a slightly older average age. Since older patients may respond differently to sedative agents. The patients in the propofol group are on average younger than those in the dexmedetomidine group (Table 1).

The mean heart rate for the dexmedetomidine group (62.60) is significantly lower than for the propofol group (76.07), and also the means of systolic and diastolic blood (110, 72) pressure are significantly higher than for the propofol group (Table 2).

There was a statistically significant difference in the hemodynamic parameter (HR, SBP and DBP) among the study and control groups as $p<0.05$r (Table 3).

The mean Central Venous Pressure for the dexmedetomidine group (13.67) is significantly higher than for the propofol group (3.47), and also the means of Blood Oxygen Saturation are a little higher for the propofol Control group (Table 4).

There was a statistically significant difference in the hemodynamic parameter (Central Venous Pressure) among the study and control groups as $p=0.00$. Also, in relation to Blood Oxygen Saturation differences were statistically non-significant (Table 5).

Regarding the sum of ranks for ICU length of stay in the dexmedetomidine study group is lower than in the propofol group. A lower sum of ranks in the dexmedetomidine group means that patients receiving dexmedetomidine had shorter ICU stays on average compared to those in the propofol group (Table 6).

Table (1): Age statistics of the studied groups.

Groups Age Statistics *t*-Test				
Group (1 = Control, 2 = Study)	N	Mean	Std. Deviation	Std. Error Mean
Participant Age:				
Control (Propofol)	15	32.33	9.552	2.466
Study (dexmedetomidine)	15	37.00	11.174	2.885

Table (2): Heart rate and blood pressure of the studied groups.

Heart Rate and Blood Pressure Groups *t*-test				
Group (1 = Control, 2 = Study)	N	Mean	Std. Deviation	Std. Error Mean
Heart Rate (bpm):				
Control (Propofol)	15	76.07	7.401	1.911
Study (dexmedetomidine)	15	62.60	3.247	.838
Systolic blood pressure:				
Control (Propofol)	15	93.33	4.880	1.260
Study (dexmedetomidine)	15	110.00	12.536	3.237
Diastolic Blood Pressure:				
Control (Propofol)	15	62.00	4.140	1.069
Study (dexmedetomidine)	15	72.00	7.746	2.000

Table (3): Heart rate and blood pressure of the studied groups ANOVA test.

	Sum of Squares	df	Mean Square	F	Sig.
Heart Rate (bpm):					
Between Groups	1360.133	1	1360.133	41.643	.000
Within Groups	914.533	28	32.662		
Total	2274.667	29			
Systolic blood pressure:					
Between Groups	2083.333	1	2083.333	23.026	.000
Within Groups	2533.333	28	90.476		
Total	4616.667	29			
Diastolic blood pressure:					
Between Groups	750.000	1	750.000	19.444	.000
Within Groups	1080.000	28	38.571		
Total	1830.000	29			

Table (4): Central venous pressure and blood oxygen saturation of the studied groups.

Group (1 = Control, 2 = Study)	N	Mean	Std. Deviation
Central Venous Pressure:			
Control (Propofol)	15	3.47	.990
Study (dexmedetomidine)	15	13.67	2.289
Blood Oxygen Saturation:			
Control (Propofol)	15	97.400	1.6388
Study (dexmedetomidine)	15	97.200	1.6562

Table (5): CVP and blood oxygen saturation ANOVA test.

CVP & SPO4 ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Central Venous Pressure:					
Between Groups	780.300	1	780.300	250.939	.000
Within Groups	87.067	28	3.110		
Total	867.367	29			
Blood Oxygen Saturation:					
Between Groups	.300	1	.300	.111	.742
Within Groups	76.000	28	2.714		
Total	76.300	29			

Table (6): Study groups Mean Ranks ICU Length of Stay (Days).

Ranks			
Group (1 = Control, 2 = Study)	N	Mean Rank	Sum of Ranks
ICU Length of Stay (Days):			
Control (Propofol)	15	23.00	345.00
Study (dexmedetomidine)	15	8.00	120.00
Total	30		

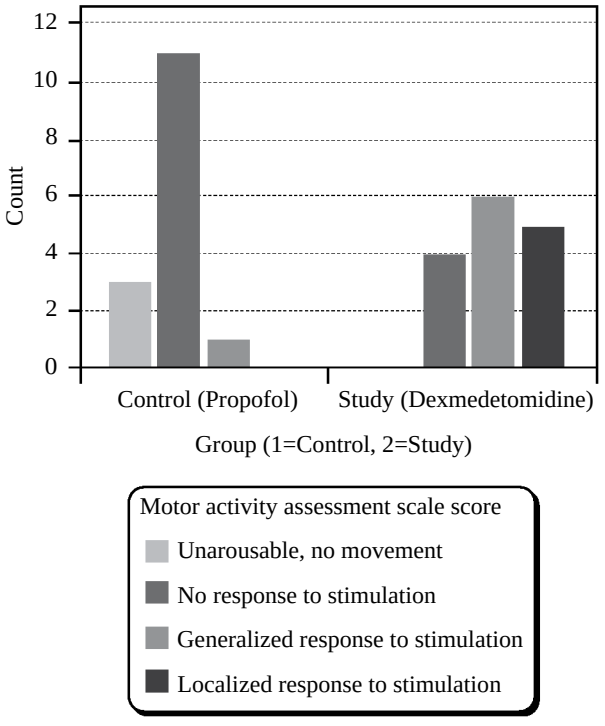

Fig. (1): Study groups motor activity assessment scale score.

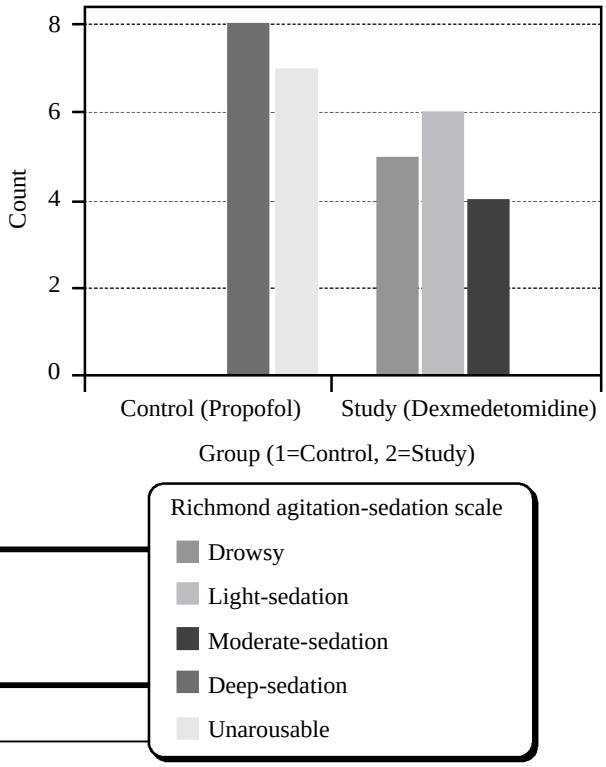

Fig. (2): Study groups richmond agitation-sedation scale scores.

Discussion

This study showed that notable age distribution patterns between the dexmedetomidine and propofol groups, with potential implications for sedative response and clinical outcomes. The dexmedetomidine group (mean age = 37 years) demonstrated a broader age range extending up to 60 years, while the propofol group (mean age = 32 years) showed a concentrated distribution in the younger age brackets, primarily 20-30s.

The age difference between groups permits careful consideration due to its potential impact on sedative response and safety profiles. Recent research by Liu et al., **[7]** demonstrates that age-related changes in drug metabolism and receptor sensitivity can significantly influence sedative drug efficacy and safety.

These differences may be attributed to several factors: Pharmacokinetic Variations as older patients typically exhibit reduced hepatic blood flow affecting drug metabolism, decreased plasma protein binding, altered drug distribution volumes and these changes can lead to prolonged drug effects and increased sensitivity to sedatives.

The clinical implications of age distribution and the broader age range in the dexmedetomidine group (up to 60 years) has several important clinical implications: As sedative sensitivity that in line with recent studies by Zhang et al., **[9]** who indicated

that older patients may require: Lower initial doses of sedative medications, more frequent dose adjustments and closer monitoring of sedation depth.

The heart rate dynamics between the two sedative agents revealed significant differences in cardiovascular responses. Patients receiving dexmedetomidine exhibited notably lower mean heart rates (62.60±3.24 bpm) compared to those receiving propofol (76.07±7.40 bpm). This finding aligns with recent research by Wang et al. *[10]* who documented the bradycardic effects of dexmedetomidine through its α2-adrenergic mechanism. The lower heart rate variability in the dexmedetomidine group (SD = 3.24 vs 7.40) suggests more stable cardiovascular parameters, which may be particularly beneficial in critically ill patients requiring precise hemodynamic control.

There were striking difference was observed in systolic blood pressure measurements between the two groups. The dexmedetomidine group maintained higher systolic pressures (110.00±12.53 mmHg) compared to the propofol group (93.33±4.88 mmHg). This finding corresponds with recent meta-analyses by Rodriguez et al. *[11]* indicating that dexmedetomidine offers superior blood pressure stability in ICU settings. The higher standard deviation in the dexmedetomidine group (12.53 vs 4.88) warrants consideration and may reflect: a) Individual patient variability in response to α2-agonists, b) Different underlying pathophysiological states and c) Varying degrees of sympathetic modulation.

Diastolic blood pressure measurements showed a similar pattern, with the dexmedetomidine group maintaining higher values (72.00±7.74 mmHg) compared to the propofol group (62.00±4.14 mmHg). Recent work by Chen et al., who suggested that this maintenance of diastolic pressure may contribute to: Improved coronary perfusion, better tissue oxygenation and reduced risk of end-organ dysfunction *[3]*.

Also, the observed hemodynamic profiles have several important clinical implications. (1) Cardiovascular Stability, the more stable heart rate profile in the dexmedetomidine group may benefit patients at risk for tachyarrhythmias and (2) Higher blood pressure values could be advantageous in patients requiring adequate tissue perfusion.

According to Patient selection, the study findings support the use of dexmedetomidine as sedative agent in patients requiring tight hemodynamic control, Cases where propofol-induced hypotension should be avoided and situations requiring preserved autoregulation. The greater variability in systolic blood pressure with dexmedetomidine study group suggests the need for: Close hemodynamic monitoring, Individual dose titration and Regular assessment of perfusion parameters.

The marked difference in Central Venous Pressure (CVP) between dexmedetomidine study (13.67±2.289 mmHg) and propofol (3.47±0.990 mmHg) groups aligns with their distinct cardiovascular effects. Dexmedetomidine, as an α2-adrenergic agonist, is known to cause vasoconstriction and increase venous return, leading to higher CVP values. This effect is well-documented in several studies, including research by Ji et al. *[5]* who observed similar CVP elevations in critically ill patients.

In contrast, propofol's lower CVP values can be attributed to its vasodilatory properties and reduction in systemic vascular resistance, as demonstrated in a comprehensive review by Tobias and Lederwho examined the hemodynamic effects of sedative agents in intensive care settings *[12]*.

The Blood Oxygen Saturation findings show minimal difference between the groups (propofol: 97.400±1.6388% vs. dexmedetomidine: 97.200± 1.6562%), suggesting both agents maintain adequate oxygenation despite their different mechanisms of action.

The slightly higher oxygen saturation in the propofol group, although not clinically significant, might be related to propofol's effects on metabolic demand and oxygen consumption, as described by Wong and Jenkins in their systematic review of sedative agents' effects on tissue oxygenation *[13]*.

The Richmond Agitation-Sedation Scale (RASS) results indicate that patients in the dexmedetomidine group experienced significantly deeper sedation than those in the propofol group. Lower RASS scores for dexmedetomidine suggest that the sedative induces a more consistent state of calmness and sedation, reducing agitation more effectively than propofol.

This finding aligns with Patel et al., *[14]* who indicated that dexmedetomidine's unique mechanism as an α2-adrenergic agonist, which modulates sympathetic outflow and induces a sedative state without substantial respiratory depression. By facilitating a deep yet stable sedation, dexmedetomidine appears to achieve a level of sedation that is both effective and conducive to ICU patient management, as supported by Riker et al., *[15]* recent studies examining its effectiveness in maintaining patient calmness with minimal side effects.

In contrast, the study by Wong & Jenkinsspecified *[13]* that propofol generally produces lighter sedation with more variability in agitation, as shown by higher RASS scores. Propofol, a GABAergic agent, effectively reduces metabolic and neuronal activity but does not offer the same degree of sympathetic modulation as dexmedetomidine, often leading to lighter sedation levels and the potential for more agitation.

This distinction makes dexmedetomidine particularly advantageous in cases where deep sedation is needed without the associated risk of respiratory depression. Furthermore, recent ICU studies by (Tobias & Leder) *[16]* emphasize that dexmedetomidine's sedative effects, combined with stable respiratory profiles, can facilitate patient management and reduce the need for ventilatory support, thus making it a preferred sedative in critical care settings where both sedation and respiratory stability are paramount.

The study stated that there was statistically significant (p=0.00) for the Richmond Agitation-Sedation Scale (RASS) between the dexmedetomidine and propofol groups highlights a clear difference in sedation depth achieved by these agents in an ICU setting. The lower RASS scores in the dexmedetomidine group reflect a deeper and more consistent level of sedation compared to patients who received propofol, indicating that dexmedetomidine effectively provides a calmer and more stable sedation state.

In agreement with Riker et al. *[17]* findings suggested that dexmedetomidine may be a preferable choice for sedation in mechanically ventilated patients due to its deeper sedation effects, lower agitation levels, and better preservation of respiratory function, although careful monitoring for cardiovascular effects is still necessary.

Also, the study by Patel et al., *[18]* highlighted that dexmedetomidine's unique mechanism as an α2-adrenergic agonist, which modulates sympathetic outflow, potentially reducing anxiety and agitation in patients.

In contrast, propofol tends to produce lighter sedation and is often associated with greater variability in agitation levels, potentially making it less ideal for situations where consistent, deep sedation is required. This variability in sedation may stem from propofol's shorter half-life and different pharmacodynamic effects on GABA receptors, which do not provide the same level of sympathetic modulation as dexmedetomidine.

The significant difference in RASS scores between the two sedatives suggests that dexmedetomidine could be a preferable choice in the ICU when aiming for stable, deeper sedation, particularly in patients were minimizing agitation and maintaining respiratory stability are priorities. Additionally, studies like that of Tobias and Leder *[19]* emphasize that deeper, stable sedation achieved with dexmedetomidine can reduce the need for frequent dose adjustments, improve patient outcomes, and facilitate smoother ICU management overall.

The study results indicated that there was a clear difference in motor activity between the control group receiving propofol and the study group receiving dexmedetomidine, as measured by the Motor Activity Assessment Scale (MAAS). It is evident that patients in the dexmedetomidine group exhibited significantly higher levels of motor activity. This suggests that dexmedetomidine may provide a more favorable sedation profile that allows for greater patient responsiveness and mobility while maintaining adequate sedation levels.

The findings were consistent with existing literature that emphasizes dexmedetomidine's unique pharmacological properties, particularly its α2-adrenergic agonist activity, which can induce sedation without the same level of respiratory depression associated with propofol *[14,17]*.

Also, Egerod et al. *[1]* emphasized that higher motor activity in sedated patients is linked to improved overall outcomes, especially in terms of reducing complications associated with prolonged immobility, such as venous thromboembolism (VTE) and pressure injuries. These complications are common in ICU patients who remain immobile due to deep sedation and are known to contribute to extended ICU stays, higher morbidity, and increased healthcare costs *[1]*.

There was statistically significant difference (p=0.00) for Motor Activity Assessment Scale (MAAS) between dexmedetomidine and propofol groups. This finding is particularly noteworthy as it aligns with the pharmacodynamic properties of both agents: dexmedetomidine, through its selective α2-adrenergic agonism, produces a more physiological sedation pattern that better preserves motor function and arousability, while propofol, acting via GABA receptor potentiation, tends to produce more profound motor suppression.

The observed difference in MAAS scores suggests that dexmedetomidine may offer advantages in scenarios where preservation of motor function is desirable, such as in neurological assessments or early mobilization protocols in ICU settings. This characteristic has been documented by Jakob et al. *[4]* who found that dexmedetomidine's lighter effect on motor activity can facilitate better patient cooperation during necessary procedures while maintaining adequate sedation levels. Moreover, this differential effect on motor activity could have important implications for ICU outcomes, particularly in preventing ICU-acquired weakness and reducing the duration of mechanical ventilation.

The study findings revealed that ICU length of stay is lower in the dexmedetomidine group compared to the propofol group, suggests that patients receiving dexmedetomidine had shorter ICU stays on average. This is a noteworthy outcome, as reduced ICU length of stay is often associated with improved patient outcomes and lower healthcare costs.

Dexmedetomidine's unique sedative properties—such as its ability to provide a calm but responsive sedation without significant respiratory depression—likely play important role in this shortened ICU stay. By allowing for controlled sedation with reduced agitation and a lower incidence of delirium, dexmedetomidine may facilitate quicker transitions from mechanical ventilation to spontaneous breathing and promote earlier mobilization, both of which are critical in achieving shorter ICU stays ***[4,20]***.

Additionally, dexmedetomidine's effects on reducing delirium, which is common among critically ill patients, may further contribute to the shortened ICU stay observed in the study. Delirium is associated with extended hospitalizations and higher mortality rates, and dexmedetomidine has been shown to reduce its incidence compared to other sedatives like propofol and benzodiazepines ***[21]***.

Also, the study findings in agreement with Wang et al., ***[10]*** who stated that dexmedetomidine α2-adrenergic agonist mechanism not only stabilizes the sympathetic nervous system but also improves sleep quality, potentially mitigating delirium's effects and enhancing recovery trajectories. These findings highlight the importance of sedative choice in the ICU setting, suggesting that dexmedetomidine may be a superior option for managing sedation in ways that optimize recovery and reduce ICU length of stay ***[22-27]***.

Conclusion:

Dexmedetomidine demonstrated significant differences in hemodynamic parameters compared to propofol that included Lower heart rate, Higher systolic blood pressure, Higher diastolic blood pressure and significantly higher central venous pressure. Blood oxygen saturation remained comparable between groups (no significant difference).

Sedation Characteristics: RASS scores were significantly lower in thedexmedetomidine group (p=0.00) that Indicating deeper and more stable sedation levels. MAAS scores showed higher motor activity in the dexmedetomidine group that Suggesting preserved motor function despite adequate sedation.

Clinical Outcomes: ICU length of stay was significantly shorter in the dexmedetomidine group (p=0.00). All results showed statistical significance (p<0.05) except for blood oxygen saturation.

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دراسة مقارنة عقار الديكسميديتوميدين وعقارالبروبوفول للتخدير فى وحدة العناية المركزة فيما يتعلق بديناميكيات الدم، وإجمالى الاقامه فى وحدة العناية المركزة

تعتبر اختيار العوامل المهدئة فى وحدات العناية المركزة من القرارات المهمة التى تؤثر على نتائج المرضى. قارنت هذه الدراسة تأثيرات الديكسميديتوميدين مقابل البروبوفول على المؤشرات الحيوية ومستويات التهدئة ومدة الإقامة فى العناية المركزة.

منهج البحث:

تم إجراء دراسة عشوائية على ٣٠ مريضاً في العناية المركزة، تم تقسيمهم إلى مجموعتين متساويتين (١٥ مريضاً لكل مجموعة):

- مجموعة الديكسميديتوميدين (مجموعة الدراسة).
- مجموعة البروبوفول (المجموعة الضابطة).

اثبتت نتائج هذه الدراسه ان عقار الديكسميديتوميدين أفضل استقراراً فى المؤشرات الحيوية كما انه حقق تهدئة فعالة مع الحفاظ على نشاط حركى مناسب، ارتبط باقامة أقصر فى العناية المركزة وعلى ذلك يمكن اعتبار الديكسميديتوميدين خياراً مفضلاً للتهدئة فى العناية المركزة.