an increase of 14% at R0 and 29% at R5, plasma lactate was eliminated by 26% at R15, while saliva lactate increased by 104% at R15, compared to the resting values **(Table 2).** As can be seen, plasma and saliva lactate show different types of dynamics and there is not a linear relation between the 2. When the percentage increase of saliva lactate is compared with that of plasma lactate in our previous study as well as in present study, no relation between them is observed. However, following WAPT, saliva lactate levels at the post-exercise 15th minute in the previous and current studies were the same (0.43 mmol/l). Our results do not indicate the presence of any significant relationship between saliva and blood lactate values.[5]

It is expected that salivary lactate levels are parallel with plasma lactate levels with increasing workloads. Some studies suggest that determination of lactate in saliva may be an alternative to blood lactate investigation.[2] In both studies our plasma lactate and saliva lactate showed increases with supramaximal loading. There was no significant correlation between the peak lactate of saliva and blood increase, also percentile of lactate increases in blood and saliva, after supramaximal exercise.

In conclusion, it seems doubtful to estimate plasma lactate level by using saliva lactate level after supramaximal exercise.

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Target level controlled sedation. *An alternative to general anesthesia in endovascular treatment of intracranial aneurysms*

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Controlled sedation, commonly used to describe the process of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the patient to tolerate unpleasant procedures by relieving anxiety, discomfort, or pain; while maintaining independent cardio-respiratory function is a term we refer to as target level controlled sedation (TLCS).[1] Endovascular therapy as interventional neuro-radiology (INR) is now an established therapeutic alternative to surgical clipping of some cerebral aneurysms.[2] In most institutions, an anesthesiologist is involved in the care of the patient during INR treatment.[3] The roles of the anesthesiologist in the INR suite are to monitor the patient, to provide appropriate anesthesia to facilitate the procedure, and to manage any complication that may arise. Embolization is usually performed under general anesthesia (GA) but in our study, we evaluate TLCS using 2 different agents in the anesthetic management of patients during the treatment of their cerebral aneurysm in the neuroradiology suite.

After approval of the Institutional Ethics Committee, and obtaining informed consent; 63 American Society of Anesthesiologists (ASA) I-III patients (37-68 years old, at least one week later than their subarachnoid hemorrhage) undergoing treatment for intracranial aneurysms by Guglielmi detachable coils (GDC) embolization were enrolled for our study. Patient demographic data, and current events prior to treatment, including the neurological status of the patient and duration of the procedure were documented. We established the intravenous access in the left hand. Patients were premedicated with midazolam 0.05 mg/kg and fentanyl one mg/kg intravenously (IV), and oxygen supplementation was stated at 2 L/min via nasal cannulae. After randomization, patients received an initial dose of propofol (10 mg/ml Fresenius-Kabi GmbH, Austria) 0.5 mg/kg (group P) or midazolam (one mg/ml, Dormicum, Roche, Basel, Switzerland) 0.05 mg/kg (group M), followed by an infusion of either propofol or midazolam as a sedative agent. The infusion rate was adjusted to maintain a sedation level of "5" by Ramsey Sedation Scale. If there was movement during the procedure, patients received additional bolus doses of propofol 0.3 mg/kg in group P, and midazolam 0.03 mg/kg in group M. After the femoral artery puncture and the initial angiogram, a 6F (2-mm diameter) nontapered guide catheter is placed in the internal carotid or vertebral artery. This guide catheter allows the passage of the microcatheter for contrast injection to perform angiograms and road mapping. Road mapping is a computer substraction technique that allows the interventional neuroradiologist to see in real time the radio-opaque endovascular tools in super-imposition with a map of the intracranial arteries.

Anticoagulation is provided with 3000-5000 IU heparin IV, followed by 1000 IU per hour. Heparinization is necessary due to the risk of thromboembolic complications. In the embolization procedure, coils of decreasing sizes were delivered into the aneurysm cavity and electrolytically detached. We recorded all complications (desaturation, apnea, hypotension, hypertension, bradycardia, tachycardia) relevant to sedation and the procedures. At the end of the procedure, the radiologist was asked to evaluate patient sedation in terms of excellent (no movement), good (one movement, no critical time), average (more than one movement or one movement at critical time) or poor (failed sedation; unable to perform procedure). Data for groups are presented as mean ± SD. Statistical analysis was performed with Chi-square and t-tests where appropriate, a *p*-value <0.05 was considered significant.

Sixty-three ruptured aneurysm patients underwent GDC embolization under TLCS. There were 38 men and 25 women with a median age of 51 years (range 37-68 years). The 2 patient groups were similar with respect to age, gender, duration of the procedure and Glasgow Coma Scale (GCS) (**Table 1**). The mean GCS of the patients before the procedure was 11.4 ± 3.3 in group M, and 11.9 ± 2.7 in group P. The duration of the procedure ranged from 89 to 213 minutes without significant differences between the 2 groups (**Table 1**). Coiling procedure was achieved successfully in all patients. The mean infusion rate to maintain "Ramsay Sedation Score 5" all through the procedure was 0.03 ± 0.02 mg/kg/h for midazolam (group M), and 2.9 ± 1.4 mg/kg/h for propofol (group P) **Table 1**. Two patients in group M and one in group P had decreases in oxygen saturation to less than 90% with the lowest level being 84% for more than one minute, but no adverse clinical outcome was detected as a result. Oxygen saturations normalized after increasing nasal oxygen supplementation from 2-4 L/min. Except from these 3 patients, no serious respiratory or hemodynamic complications occurred with either drug regimens. There were no other adverse events, or complications related to sedation in either groups. All patients satisfactorily maintained a level of

Table 1 - Profile of patients undergoing GDC treatment of cerebral aneurysms.

Characteristics	Group M	Group P
No. of patients	31	32
Duration of procedure (min)	131 ± 41	157 ± 56
Age (year)	49 ± 11	52 ± 15
Weight (kg)	75 ± 19	79 ± 21
Male	13	12
Female	18	20
GCS	11.4 ± 3.3	11.9 ± 2.7
Infusion rate (mg/kg/h)	0.03 ± 0.02	2.9 ± 1.4

GDC - Guglielmi detachable coils, GCS - Glasgow coma scale.

sedation that was adequate for the completion of the procedure.

Traditionally, the treatment of cerebral aneurysms involved surgical intervention,[4,5] but recent developments in INR have resulted in more patients undergoing endovascular coiling. There is little information in the literature regarding the anesthetic management of patients with cerebral aneurysms undergoing endovascular treatment. Our goal was to manage GDC embolization of the patients in the INR suite with TLCS. Target level controlled sedation; the less invasive approach of INR may be a good alternative in the management of embolization procedure. In addition, to reducing the risk associated with GA, performing GDC embolization under sedation permits regular neurological evaluation of the patient throughout the procedure. In the event of a thromboembolic complication, early detection of neurological deficits and their severity allows timely and appropriate use of thrombolytic therapies. The technique of anesthesia used for INR procedures varies from light sedation to GA from hospital to the hospital, but often GA is the preference of the neuroradiologist.[6] Another benefit of TLCS in GDC embolization of the aneurysms is; during TLCS, the patient serves as an effective overall monitor of neurological status. In INR, the ability to assess the neurological status of patients during the procedure or immediately at the end of the procedure is desirable. The maintenance of optimal level of blood pressure is also very important during these procedures. The sedative agents in TLCS also help to maintain intended mean arterial pressure during the procedure. The level of mean arterial blood pressure during the procedure in this study was similar in both propofol and midazolam groups, and we did not have any problem with the maintenance of blood pressure or fluid management of the patients in INR, and no patients required any pharmacological agents to control their blood pressure during the procedure. Target level controlled sedation is an alternative to GA in GDC embolization of intracranial aneurysms. Monitoring standards (electrocardiogram, pulse oximetry, non invasive blood pressure, capnography, central venous lines for volume status) for anesthesia in the INR suite, is not different from the operation room.[7,8]

Published data suggest that oximetry effectively detects oxygen desaturation and hypoxemia in patients who are administered sedatives/analgesics, and early detection of hypoxemia through the use of oximetry during sedation decreases the likelihood of adverse outcomes.[9] The use of propofol or midazolam in INR suite requires the presence of an anesthetist, as the primary complication of sedation is related to respiratory or cardiovascular depression. Safety aspects such as the need for assisted ventilation in cases of apnea must be ready.[10] Our results suggest that the application of sedatives in TLCS may yield even better levels of safety compared with the conventional infusion of midazolam and propofol. The weakness of this study or the question of the readers may be "why the authors have not compared TLCS with GA for GDC embolization procedure?" The brief answer is; there is no information in the literature regarding the sedative management of patients with cerebral aneurysms undergoing endovascular treatment in the INR suite. And the next step of this study will be the comparison of GA versus TLCS.

In conclusion, the anesthetic management of patients with cerebral aneurysms performed using GDC embolization under TLCS appears to be feasible, and allows intra-procedural evaluation of the patient. Potential advantages of TLCS include early detection of neurological complications, decreased cardiopulmonary morbidity rates, shorter hospital stay, and lower hospital costs.

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The frequency of skin diseases in obese children and adult Iraqi population

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Obesity is a major health problem that is commonly associated with skin manifestations, such as acanthosis nigricans and skin tags, but unfortunately, only limited studies exist concerning this problem.[1] The aim of the present work is to evaluate the frequency of skin diseases among obese children and adults.

This study consists of 2 parts. ***Part 1***: We took a cross-sectional sample from Basrah primary schools (urban only). We carried out the study from December 2003 to March 2004, and included 13 primary schools; 8 for boys and 5 for girls. The number of pupils in the sample was 4189; 2616 boys and 1573 girls. We used body mass index [(BMI) = (weight [kg])/height [m]^2] to select the number of overweight and obese subjects considered for study. There were 52 obese; 34 boys and 18 girls, and 94 overweight; 56 boys and 38 girls, their ages ranged from 7-13 years. We considered 100 pupils; 60 boys and 40 girls of normal weight as the control group, comparable for age, sex and selected from the same class as the obese pupils. We carried out a full clinical and dermatological examination to establish the