Journal of MTU 2024;3(3):132-134
ISSN: 2822-4094

Editöre Mektup / Letter to the Editor

Journal of Medical Topics & Updates (Journal of MTU)

Doi: 10.58651/jomtu.1523581

Perfusion checklist check - how does it affect clinical perfusion practice?

Perfüzyon kontrol listesi kontrolü - klinik perfüzyon uygulamasını nasıl etkiler?

Bişar AMAÇ[1] Murat Ziya BAĞIŞ[2]

[1]Harran University, Faculty of Health Sciences, Department of Perfusion, Şanlıurfa, Türkiye.
[2]Harran University, Faculty of Medicine, Department of Cardiovascular Surgery, Şanlıurfa, Türkiye.

ABSTRACT

Perfusionists involved in cardiac surgery play an important role both in the management of the heart-lung machine and in the preparation and management of other extracorporeal circulatory equipment. Various checklists can be used in the management and preparation of this equipment. These lists may vary in each heart centers. Although this situation eliminates the existence of a standardised perfusion checklist, it may sometimes cause checklist fatigue in perfusionists and may cause perfusionists to mark the tasks listed in the checklist without paying direct attention.
In conclusion, we think that standardisation of the perfusion checklist will create an effective communication environment and safety culture; it will also ensure the elimination of adverse situations as in many clinical activities. Furthermore, standardisation will eliminate the checklist fatigue of perfusionists and lead to better clinical outcomes.
Keywords: Perfusion, checklist, clinical perfusion practice

ÖZET

Kalp cerrahisinde yer alan perfüzyonistler, hem kalp-akciğer makinesinin yönetiminde hemde diğer ekstrakorporeal dolaşım ekipmanlarının hazırlanması ve yönetiminde önemli rol oynamaktadırlar. Bu ekipmanların yönetiminde ve hazırlanmasında çeşitli kontrol listeleri kullanılabilmektedir. Bu listeler, her kalp merkezinde farklılık gösterebilmektedir. Bu durum standartlaşmış bir perfüzyon kontrol listesi varlığını ortadan kaldırmakla beraber, bazen perfüzyonistlerde kontrol listesi yorgunluğunu ortaya çıkarabilmekte ve perfüzyonistlerin kontrol listesinde listelenen görevleri, doğrudan dikkat etmeden işaretlemesine neden olabilmektedir.
Sonuç olarak, perfüzyon kontrol listesinin standartlaştırılmasının, etkili iletişim ortamını ve güvenlik kültürünü yaratacağını; ayrıca birçok klinik faaliyette olduğu gibi olumsuz durumların ortadan kaldırılmasını sağlayacağını da düşünmekteyiz. Ayrıca standardizasyon, perfüzyonistlerin kontrol listesi yorgunluğunu ortadan kaldıracak ve daha iyi klinik sonuçların ortaya çıkmasını sağlayacaktır.
Anahtar Kelimeler: Perfüzyon, kontrol listesi, klinik perfüzyon uygulaması

Geliş Tarihi / Received: 28.07.2024, Kabul Tarihi / Accepted: 22.10.2024
Sorumlu Yazar / Corresponding Author: Bişar AMAÇ, Harran University, Faculty of Health Sciences, Department of Perfusion, Şanlıurfa, Türkiye. e-mail: amacbisar@gmail.com

Dear Editor;

Perfusionists involved in cardiac surgery play an important role both in the management of the heart-lung machine and in the preparation and management of other extracorporeal circulatory equipment. Various checklists can be used in the preparation of these equipment.

Cardiac procedure recommendation lists may vary across different medical institutions. Although this situation eliminates the existence of a standardised perfusion checklist, it may sometimes cause checklist fatigue in perfusionists and may cause perfusionists to mark the tasks listed in the checklist without paying direct attention (Datt, 2024; Pulido, 2020)

Perfusion safety checklists are now commonly used in routine cardiovascular perfusion practices and are accepted as a standard. The incidence of surgical complications has remained largely unchanged over the last two decades. The inherent complexity of surgery, new technological possibilities, increasing age and comorbidity in patients may contribute to this. Surgical safety checklists can be used as some tools to prevent such complications. The use of checklists can reduce critical workload by eliminating problems that have already been checked. The global introduction of the World Health Organisation surgical safety checklist aimed to improve safety in surgery and reduce complications and mortality through better teamwork, communication and consistency of care (Haugen et al., 2019). Recent studies have also demonstrated that patients subjected to surgical safety checklists have better postoperative outcomes (Pulido, 2020) It has also been reported that the implementation of a safety checklist in adult cardiac surgery significantly reduces 4-month mortality (Spanjersberg et al., 2020).

In cardiac surgery, safety checklists should be standardised in order to improve the clinical outcomes and adverse conditions that may occur due to perfusionist or perfusion applications and the importance and timeliness of this issue should be ensured both by standardising safety checklists and making them a part of perfusion education and by providing in-service training to actively working perfusionists. The cooperation of relevant professional organisations and perfusion education institutions is of great importance in this regard. However, a checklist alone is not sufficient to achieve ideal results. The apparent simplicity of this tool may not guarantee the quality and safety of its application in the operating theatre. On the contrary, it can easily become a passive exercise instead of an active safety tool. An important mechanism of action of the checklist is to promote behavioral change in the or to create an effective communication environment and safety culture. Using the checklist correctly can improve communication and work processes in the operating theatre. A comprehensive perfusion safety checklist requires good communication and teamwork, which is not always present in various organizations (Tartaglia and Matos, 2022).

If the importance of the parameters in the perfusion checklist is not taken into consideration, many possible system complications of cardiopulmonary bypass may be encountered and may even cost the life of the patient. The most important parameters in this perfusion checklist can be listed as follows:

- Patient identity check,
- Control of compliance with sterility dates,
- The pump is plugged into the mains and working,
- Checking the running status of the pump batteries,
- Checking the operating status of the heater cooler,
- Checking the condition of the water connections,
- Checking the condition of the gas connections,
- Control of O2 / air mixer working status,
- Checking the operating status of the suctions,
- Checking the correctness of the suction directions,
- Checking the correct calibration status of the flow sensor direction,
- Checking the installation status of the heat probes,
- Checking the status of setting pressure alarm limits,
- Checking the gas line installation status,
- Control of the gas outlet opening,
- Check of all system air removal status,
- Checking the deflation status of the cardioplegia set,
- Checking the readiness of the hand crank,
- Checking the availability of suitable tube clamps,
- Control of the patient's fully heparinised status,
- Checking the system bypass readiness status.

The perfusion safety checklist may have been neglected by perfusionists in all hospitals in Turkey. Therefore, acknowledging this fact may be the beginning of an urgent and necessary reflection, even if it reveals inconsistencies regarding working processes in the operating theatre. In conclusion, standardizing the perfusion checklist can foster an effective communication environment and a culture of safety. Moreover, standardization will mitigate

negative situations observed in various clinical activities. Additionally, standardization can alleviate the checklist fatigue experienced by perfusionists, potentially leading to improved clinical outcomes.

Acknowledgement

Ethics Committee Approval: Since it is a letter to the editor, ethics committee approval is not required.

Financial Resource/ Sponsor's Role: The study did not receive financial support.

Conflict of Interest: The authors declare that there is no personal or financial conflict of interest within the scope of the study.

Author Contributions:

Idea/Concept: Bişar AMAÇ, Murat Ziya BAĞIŞ; **Design:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Supervision/Consulting:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Data Collection and/or Processing:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Analysis and/or Interpretation:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Literature Review:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Writing of the Article:** Bişar AMAÇ, Murat Ziya BAĞIŞ; **Resources and Funding:** Bişar AMAÇ, Murat Ziya BAĞIŞ

REFERENCES

Datt B. (2024). The checklist checkup & checklist fatigue - Say what? How does it impact clinical perfusion practice. The Journal of Extra-Corporeal Technology, 56(1), 32–33.

Haugen, A.S., Sevdalis, N. & Søfteland, E. (2019). Impact of the World Health Organization Surgical Safety Checklist on Patient Safety. Anesthesiology, 131(2), 420–425.

Pulido J.N. (2020). Commentary: Checklist fatigue? A unique opportunity in cardiac surgical care. The impact of a voluntary, cardiac surgery-specific safety checklist. The Journal of Thoracic and Cardiovascular Surgery, 159(5), 1891–1892.

Spanjersberg, A.J., Ottervanger, J.P., Nierich, A.P., Speekenbrink, R.G.H., Stooker, W., Hoogendoorn, M., van Veghel, D., Houterman, S. & Brandon Bravo Bruinsma, G.J. (2020). Implementation of a specific safety check is associated with lower postoperative mortality in cardiac surgery. The Journal of Thoracic and Cardiovascular Surgery, 159(5), 1882–1890.e2.

Tartaglia, A. & Matos, M.A.A. (2022). Surgical safety checklist: fact or fake? Einstein (Sao Paulo, Brazil), 20, eCE0059.