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RANA HOSPITALNA TRIJAŽA PACIJENATA SA URGENTNIM STANJIMA

Uvod

Reč trijaža (od francuskog glagola *trier*, razvrstavati) predstavlja proces razvrstavanja pacijenata u različite prioritetne grupe u zavisnosti od stepena težine njihovog oboljenja ili povrede. Za sprovođenje trijaže formirane su skale nastale na bazi istraživanja. Trijaža pacijenata odmah po ulasku u urgentni centar omogućava ranu identifikaciju najugroženijih. Trijažiranje po odabranoj trijažnoj skali za svakog pacijenta i situaciju omogućava:

- Započinjanje adekvatne terapije u optimalnom vremenu, što je naročito važno za pacijente kojima je život ugrožen;
- Pravilno kategorisanje svih pacijenata;
- Protok pacijenata i smanjenje gužve u urgentnom centru;
- Smanjenje ukupnog vremena provedenog u urgentnom centru;
- Smanjenje dužine čekanja.

Trijažna sestra koja primenjuje trijažnu skalu na bazi nje zaključuje: „Ovaj pacijent može da čeka na pregled i terapiju minuta. (1)

Urgentni centar (trauma odeljenje, urgentno odeljenje) je onaj centar koji zbrinjava hitne slučajeve; broj pacijenata se iz godine i godinu povećava i urgentni centri postaju sve više domovi zdravlja. Po definiciji, hitan pacijent je onaj koji zbog svog stanja zahteva pomoć u datom momentu, a ne u zakazanom terminu.

Trijažni proces podrazumeva sledeće trijažne grupe i sledstveno vreme zbrinjavanja:

Crvena: momentalno

Narandžasta: unutar 10 minuta

Žuta: unutar 60 minuta

Zelena: unutar 240 minuta (4 sata)

Plava: pacijent se upućuje određenom specijalisti (unutar 2 sata)

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Svaki urgentni centar (odeljenje) treba da ima razrađenu proceduru koja mora da se prati u svakom pojedinačnom slučaju.

Procedura bilo kog trijažnog modela mora da sadrži sledeća tri elementa: trijažnu opremu, način sprovođenja trijažnih koraka i uklapanje trijažne procedure u kretanje pacijenta.

Uspeh trijaže zasniva se na:

- Trijažiranju svih pacijenata što pre po dolasku u urgentni centar;
- Prisustvu za to određenog trijažnog osoblja u svakom momentu;

Određen trijažni proces treba da obavlja samo iskusno medicinsko osoblje i lekari specijalisti urgentne medicine.

Za sprovođenje trijaže potrebno je obezbediti adekvatan prostor. Ovaj prostor mora biti jasno obeležen, siguran (blizu obezbeđenja) i dovoljno prostran za boravak pacijenata i trijažnog osoblja.

U trijažnoj ambulanti moraju da se nalaze formulari za trijažnu dokumentaciju i oprema za registrovanje vitalnih funkcija.

U urgentnim centrima/odeljenjima širom sveta upotrebljavaju se različiti trijažni sistemi da bi se odredila težina stanja pacijenta i dijagnostičko-terapijski prioriteti.

Petostepeni trijažni sistemi koji se najčešće upotrebljavaju su: Australijska trijažna skala (ATS), Kanadska skala za trijažu i validaciju (CTAS), Mančesterski trijažni sistem (MTS), Indeks težine hitnih stanja (ESI), Južnoafrička trijažna skala itd. (2)

Upotreba trijažnih sistema

Odrasli i deca iznad 13 godina (ili viša od 150 cm) trijažiraju se po skorom za odrasle. Deca se trijažiraju po pedijatrijskom skorom. Starija deca (3–12 godina ili visine 96–150 cm) trijažiraju se skorom za odrasle, a mlađa od 3 godine (niža od 96 cm) pedijatrijskim skorom za mlađu decu.

Procedura:

- Merenje i evidentiranje vitalnih funkcija;
- Računanje ukupnog trijažnog skora i dokumentovanje u odgovarajućem formularu (postoje posebni formulari za odrasle i decu);
- Uraditi posebna ispitivanja, ako je potrebno, jer ona mogu svrstati pacijenta u viši prioritetni nivo;
- Jasno dokumentovati dodeljenu kategoriju.

Sama registracija vitalnih parametara nije dovoljna za određivanja stepena ugroženosti pacijenta u urgentnim centrima/odeljenjima. Zbog toga se u svetu upotreblja-

vaju različiti sistemi pomoću kojih je moguće identifikovati prioritete u zbrinjavanju. Petostepeni sistemi su vrlo pogodni za optimalnu upotrebu resursa urgentnih centara za dobrobit pacijenata, upravljanje hospitalizacijom, optimalizaciju dužine zbrinjavanja, transfer na određena odeljenja (odeljenja intenzivne terapije), smanjenje i praćenje mortaliteta itd. (3)

- **CRVENO:** Pacijent se odmah odvodi u reanimacionu ambulantu i zbrinjavanje počinje bez odlaganja.
- **NARANDŽASTO:** Pacijent se odvodi u ambulantu za urgentne pacijente i zbrinjavanje počinje unutar 10 minuta.
- **ŽUTO:** Pacijenti se po trijaži planiraju za hitno zbrinjavanje unutar jednog sata.
- **ZELENO:** U Urgentnom centru se upućuju na čekanje ili im se savetuje da potraže rutinsku planiranu (zakazanu) medicinsku pomoć. (Rešavanje ili čekanje do četiri sata)
- **PLAVO:** Upućuju se određenom specijalisti za rutinsku medicinsku obradu (Moguće uraditi u toku dva sata). (4, 7)

Svi pacijenti moraju proći trijažnu proceduru!

Posttrijažna nega

Posle prve trijaže svi pacijenti koji čekaju moraju biti povremeno viđeni i po potrebi retrijažirani.

Kvalitet trijaže

Standardi trijaže se moraju postaviti za sve urgentne centre/službe i moraju se porediti sprovođenje procedure i rezultati trijaže u nadležnim službama. Poređenje se mora odnositi na: trijažni obrazac, njegovo sprovođenje i distribuciju pacijenata po kategorijama; prijem na odeljenja intenzivnog lečenja (za urgentne centre) ili na odgovarajuća odeljenja (za urgentna odeljenja i odseke) i proveru vremena čekanja na zbrinjavanje po kategorijama. (4, 5)

Odgovornost

Svaki direktor ili načelnik urgentnog centra ili odeljenja mora da imenuje tim odgovoran za implementaciju i funkcionisanje trijažnog procesa. Ovaj tim se mora sastojati najmanje od jednog lekara i dve sestre.

Direktor (načelnik) odgovoran je za implementaciju trijažnog programa i obučavanje osoblja. (6)

Vodeći skorovi za petostepene trijažne sisteme su MEMS (Medical Early Warning System – Medicinski sistem ranog upozoravanja) i TEWS (The Triage Early Warning System – Trijažni sistem ranog upozoravanja – fiziološki skor izveden iz MEMS). (7)

Parametri MEMS-a

1. Broj respiracija
2. Puls – broj otkucaja
3. Sistolni krvni pritisak
4. Temperatura
5. Stanje svesti – AVPU = **a**lert, **v**erbal, **p**ain, (**u**nconsciousness) svestan, reaguje na glas, reaguje na bol, nesvestan).

Dodatni parametri za TEWS:

1. Mobilnost.
2. Postojanje trauma.

Parametar	Nalaz	Poeni
Respiracije (br./min)	<9	2
	9–14	0
	15–20	1
	21–29	2
	≥ 30	3
Puls (otkucaja/min)	<41	2
	41–50	1
	51–100	0
	101–110	1
	111–129	2
	≥ 130	3
Sistolni pritisak (mm Hg)	<71	3
	71–80	2
	81–100	1
	101–199	0
	≥ 200	2

Temperatura	<35°C	2
	35–38.4°C	0
	≥ 38.5°C	2
Stanje svesti	Svestan	0
	Reaguje na glas	1
	Reaguje na bol	2
	Ne reaguje	3
Mobilnost	Hoda samostalno	0
	Hoda uz pomoć	1
	Nepokretan, zahteva kolica	2
Trauma	ne	0
	da	1

- Trauma podrazumeva tešku traumu
- Pacijent sa sniženim stepenom svesti vodi se kao nepokretan.

Tumačenje

- Minimalni skor 0.
- Maksimalni skor 17.
- Viši skor je pokazatelj težeg stanja pacijenta.

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TRIAGE PROCEDURE IN EARLY HOSPITAL MANAGEMENT OF PATIENTS IN EMERGENCY CENTRES

Background

Triage (from the French word “trier”, means: “to sort“). is the process of sorting patients into different priorities based upon their degree of illness or injury. Triage Scales are the scientifically developed tools. Triage of patients at the point of entry into the Emergency Centre (EC) allows early identification of the sickest patients. During the implementation of triage scales, the following advantages have repeatedly been observed:

- Expedites the delivery of time-critical treatment for life-threatening conditions.
- Ensures that all patients are appropriately categorised
- Improves patient flow, and decreases overcrowding within the EC
- Improves patient and health provider satisfaction
- Decreases overall length of stay
- Decreases waiting times

The triage nurse applying triage scales must address the question: *This patient can wait for medical assessment and treatment no longer than minutes. (1)*

An Emergency Centre (EC), (Trauma Units or Medical Emergency Unit) is any centre seeing emergency cases-however, reflected in the year-by-year increases in patient numbers, emergency departments are increasingly being selected as the route of primary access to the healthcare system

Emergency cases are those patients who present to the emergency centre seeking non-scheduled care.

The following priority groups and target times to treat are assigned by the triage scales:

Red	Immediate
Orange	Within 10 minutes
Yellow	Within 60 minutes

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Green Within 240 minutes (4 hours)

Blue Deceased (two hours)

Every emergency center (unit) has to detail the procedure to be followed in triage of emergency cases in each.

The procedure for use of any triage scale has to be detailed in three parts: triage requirements, the stepwise use of a scale and how triage fits into the patient journey.

Success of triage depends upon:

- All patients are to be triaged as soon as possible after arrival at a facility
- A dedicated triage staff is required at all times

Only experienced professionals and EM doctors may have the discretion inherent in the triage scale using in the EC/EU.

A dedicated triage area is required. Such an area requires to be well signed, secure (in easy view of security staff), large enough to accommodate the triage staff and a patient.

The triage area is to contain triage paperwork and all other equipment necessary for vital signs measurement.

Different triage systems are used in emergency centres/units around the world to assess the severity of incoming patients' conditions and assign treatment priorities. Few five-level triage instruments are identified: the Australasian Triage Scale (ATS), the Canadian Triage and Acuity Scale (CTAS), the Manchester Triage System (MTS), and the Emergency Severity Index (ESI), the Cape Triage Scale, etc.(2)

The stepwise use of the triage scores

Adults and all children aged 13 years or older (or taller than 150 cm) are to be triaged using the adult score chart. All children are to be triaged using the paediatric chart. Older children aged between 3 and 12 years (or 96-150 cm tall) are to be triaged with the triage scores for adults, while children under 3 years of age (or smaller than 96 cm) are to be triaged with the score for a younger child.

The procedure:

- Measure the vital signs and document the findings:
- Calculate the total using score and document the finding using the age appropriate chart.
- Match the score to the discriminator list and assign the patient to the higher triage category.
- Check the triage additional investigations for further investigations that may assign the patient to a higher triage priority level.
- Document the final triage category.

Registration of vital signs alone is not suitable for identification of critically ill patients in the emergency department. Therefore various systems are used internationally to determine initial treatment priorities. Five-level instruments are significantly correlated with resource utilization, rates of admission for inpatient treatment, duration of emergency treatment, and frequency of admissions, transfer to intensive care units, or mortality.(3)

Five-level triage instruments: the Australasian Triage Scale (ATS), the Canadian Triage and Acuity Scale (CTAS), the Manchester Triage System (MTS), and the Emergency Severity Index (ESI), the Cape Triage Scale, etc.

- RED patients are to be taken to the resuscitation room without delay and handed over for emergency management
- ORANGE patients are to be taken to the majors area and handed over for very urgent management
- YELLOW patients are to be handed over for urgent management.
- GREEN patients may be referred for streaming (if this is in place at the EC) or instructed to wait in the waiting room to be seen for routine management.
- BLUE patients are to be refer to doctor for certification(4,7)

All patients are to be triaged!

Post Triage Care

The duty nurse in charge of the EC must ensure continuous reassessment of those patients who remain waiting and, if the clinical features change, re-triage the patient accordingly.

Quality Assurance

Benchmarks for ECs of similar role delineation will allow comparison between these units. Such benchmarks will include (but are not limited to): patterns of triage category distribution; mortality by triage category; ICU admission by triage category (for Central ECs) or referral rates (for other ECs), and waiting times by triage category.(4,5)

Responsibilities

Each facility head (manager) has to assign a task team to be responsible for the implementation and functioning of triage. This team should consist of at least one doctor and two nurses.

The facility head (manager) is responsible for developing a triage programme and provide the training.(6)

The leading scores, used for five-level triage instruments are the MEWS (Medical Early Warning System) and The Triage Early Warning System (TEWS- a physiological score based on the MEWS)(7).

Parameters from MEWS

1. respiratory rate
2. heart rate
3. systolic blood pressure
4. temperature
5. consciousness as AVPU = alert, verbal, pain, unconsciousness

Additional Parameters for TEWS

1. mobility
2. trauma

Parameter	Finding	Points
respiratory rate	<9 breaths per minute	2
	9–14 breaths per minute	0
	15–20 breaths per minute	1
	21–29 breaths per minute	2
	≥ 30 breaths per minute	3
heart rate	<41 beats per minute	2
	41–50 beats per minute	1
	51–100 beats per minute	0
	101–110 beats per minute	1
	111–129 beats per minute	2
	≥ 130 beats per minute	3
systolic blood pressure	<71 mm Hg	3
	71–80 mm Hg	2
	81–100 mm Hg	1
	101–199 mm Hg	0
	≥ 200 mm Hg	2

Parameter	Finding	Points
temperature	<35°C	2
	35–38.4°C	0
	≥ 38.5°C	2
consciousness	alert	0
	responds to voice	1
	responds to pain	2
	unresponsive	3
mobility	walking	0
	with help	1
	immobile, requires stretcher	2
trauma	absent	0
	present	1

- Trauma refers to severe trauma.
- A patient who has decreased consciousness should be listed as immobile on the mobility scale.

Interpretation

- minimum score: 0
- maximum score: 17
- The higher the score, the more serious the patient's condition.

References

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