Anemia e carenza marziale: opzioni terapeutiche ed approcci clinici

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Esperienza in ProntoSoccorso - Opedale di Legnano

Dr. Ivo Beverina

Responsabile U.O.S Centro Trasfusionale

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Ospedale di Legnano

PATIENT BLOOD MANAGEMENT
ASST OVEST MILANESE

Sistema Socio Sanitario
Regione Lombardia
ASST Ovest Milanese

APPROCCIO MULTIDISCIPLINARE
ALL'ANEMIA SIDEROPENICA:
UNA PATOLOGIA FREQUENTE E CURABILE

29 NOVEMBRE 2019
Hotel Hilton Milano

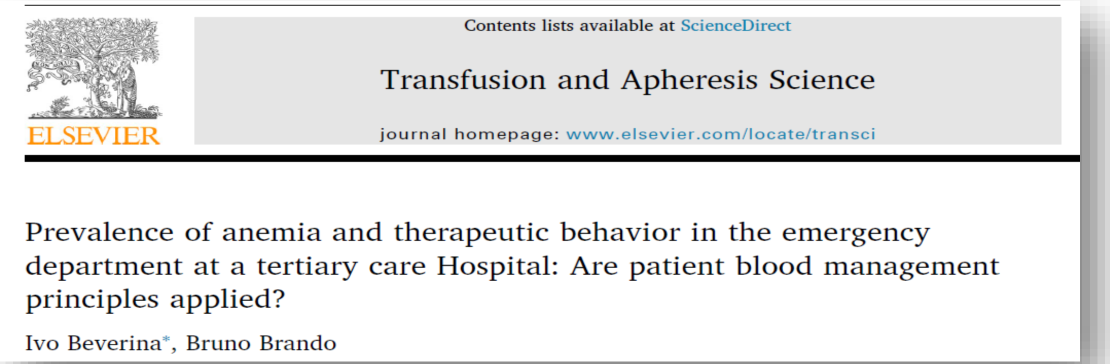
Responsabile Scientifico
Silvano Rossini

La prima fase

MARKET
ANALYSIS

Aspetti valutati

- Prevalenza generale dell’anemia nei pazienti che si sono presentati al Pronto Soccorso di Legnano nel 2015
- Approccio trasfusionale
- Prevalenza stimata dell’anemia da carenza marziale
- Approccio non trasfusionale (terapia marziale)



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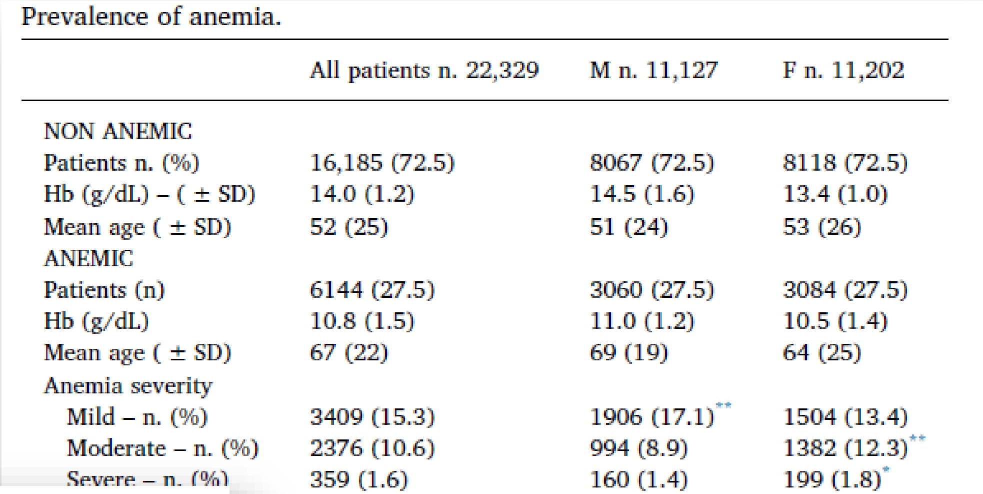

Prevalence of anemia.

	All patients n. 22,329	M n. 11,127	F n. 11,202
NON ANEMIC			
Patients n. (%)	16,185 (72.5)	8067 (72.5)	8118 (72.5)
Hb (g/dL) – (± SD)	14.0 (1.2)	14.5 (1.6)	13.4 (1.0)
Mean age (± SD)	52 (25)	51 (24)	53 (26)
ANEMIC			
Patients (n)	6144 (27.5)	3060 (27.5)	3084 (27.5)
Hb (g/dL)	10.8 (1.5)	11.0 (1.2)	10.5 (1.4)
Mean age (± SD)	67 (22)	69 (19)	64 (25)
Anemia severity			
Mild – n. (%)	3409 (15.3)	1906 (17.1)**	1504 (13.4)
Moderate – n. (%)	2376 (10.6)	994 (8.9)	1382 (12.3)**
Severe – n. (%)	359 (1.6)	160 (1.4)	199 (1.8)*

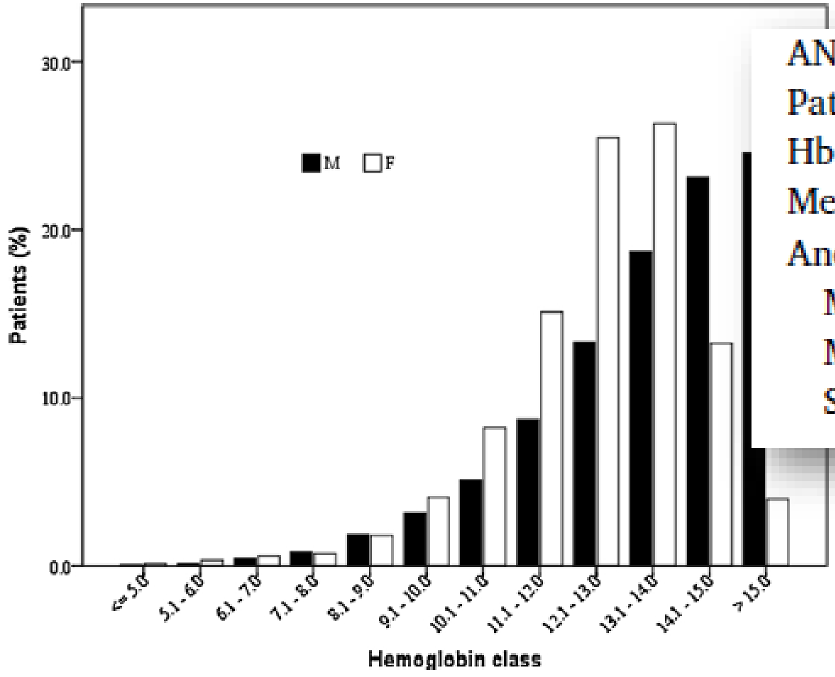

Fig. 2. Hemoglobin values at admission.

ANEMIC	
Patients (n)	6144 (27.5)
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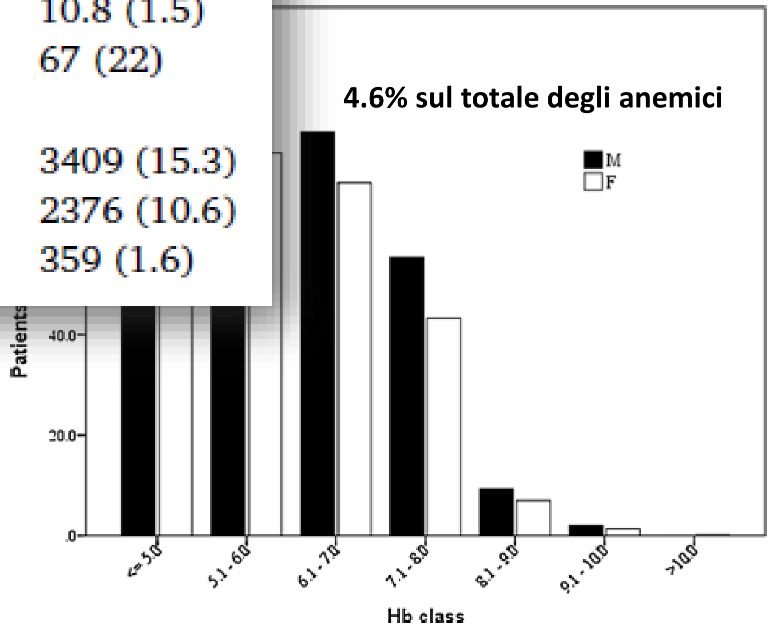
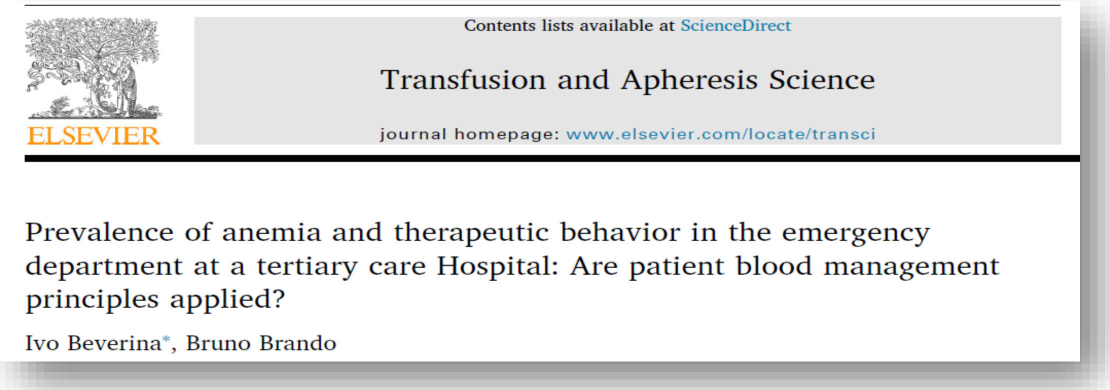


4.6% sul totale degli anemici

Fig. 3. Percentage of patients transfused by hemoglobin (Hb) class. Note: The differences between males and females for each Hb class do not reach the statistical significance at $p < 0.05$.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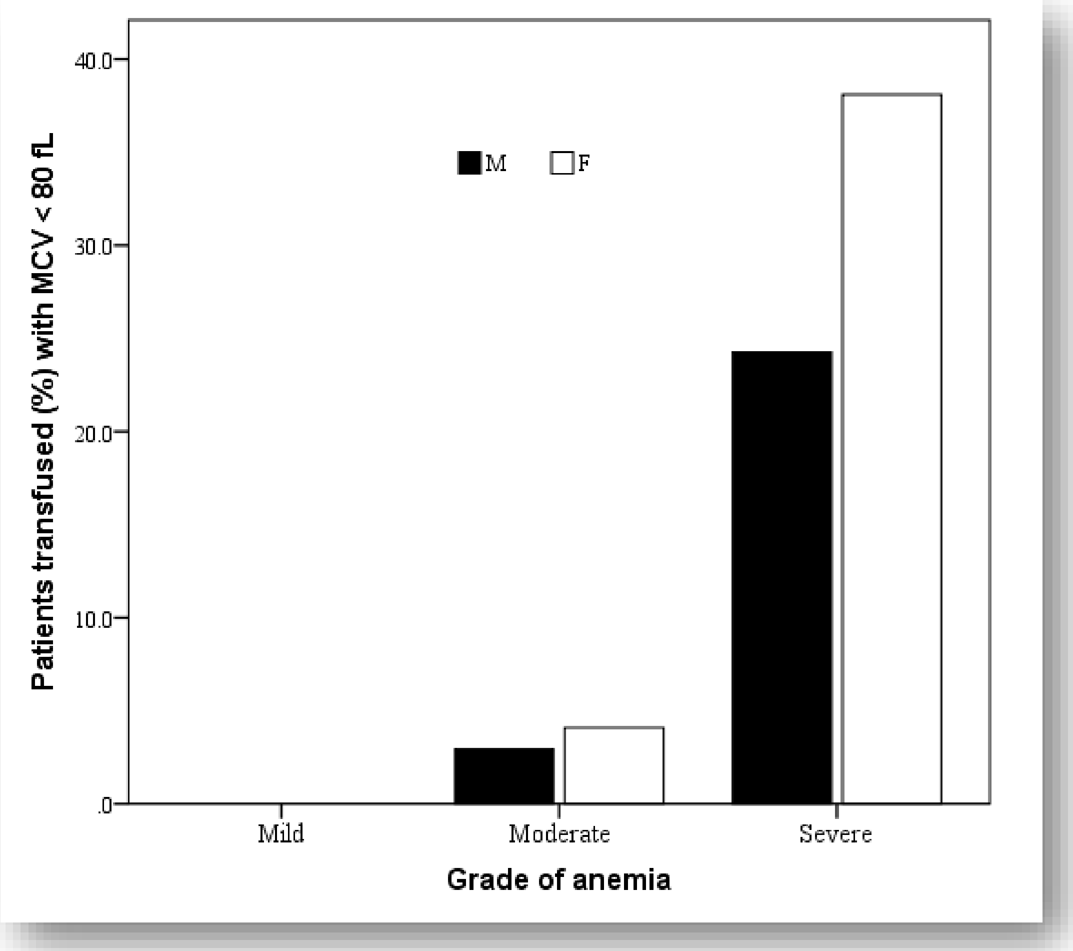
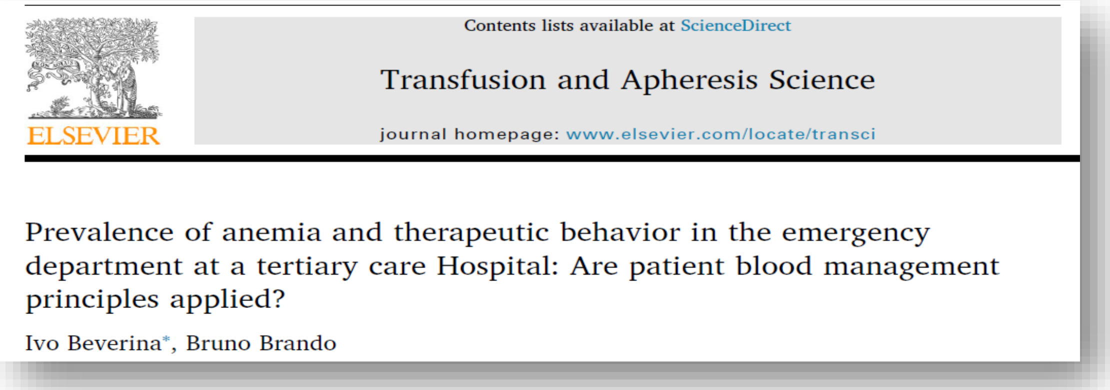
IL 30% CIRCA DEI PAZIENTI TRASFUSI
PER ANEMIA SEVERA SONO RISULTATI MICROCITICI

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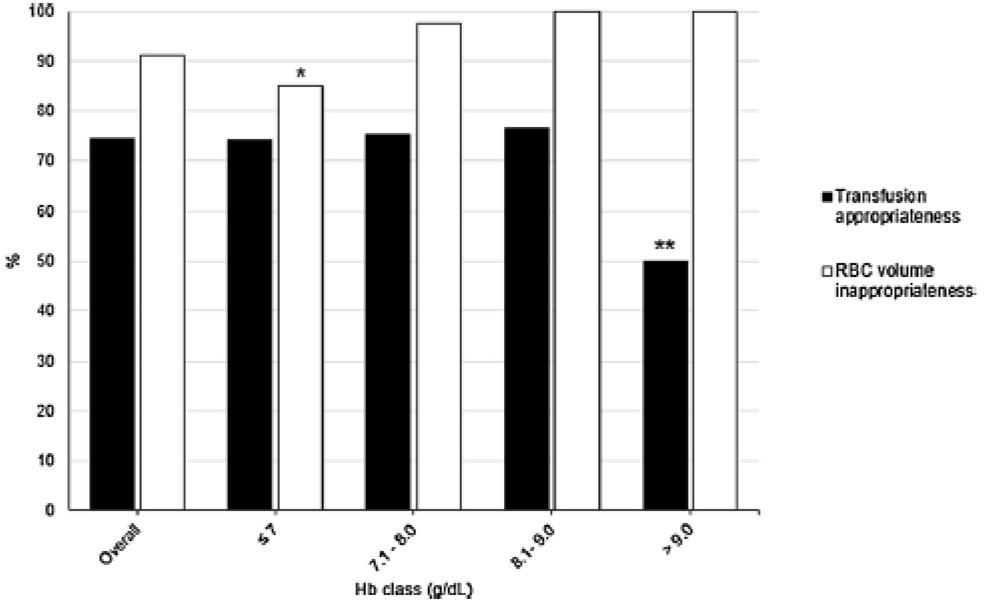

Fig. 4. Transfusion appropriateness and RBC volume inappropriateness by hemoglobin (Hb) class. Note: * $p < 0.05$ ** $p < 0.00$ (Fisher exact test).

ELEVATA APPROPRIATEZZA TRASFUSIONALE (74.5%)

ELEVATA INAPPROPRIATEZZA IN TERMINI DI VOLUME DI GRC TRASFUSO (91.2%)

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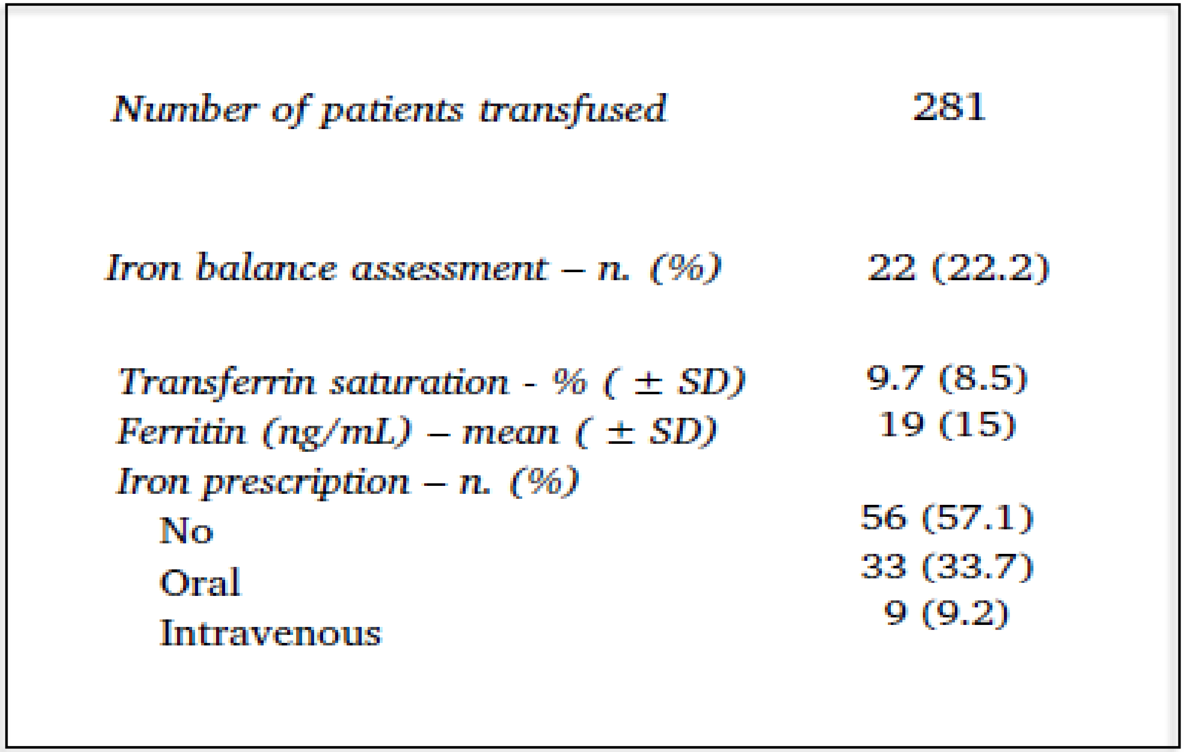


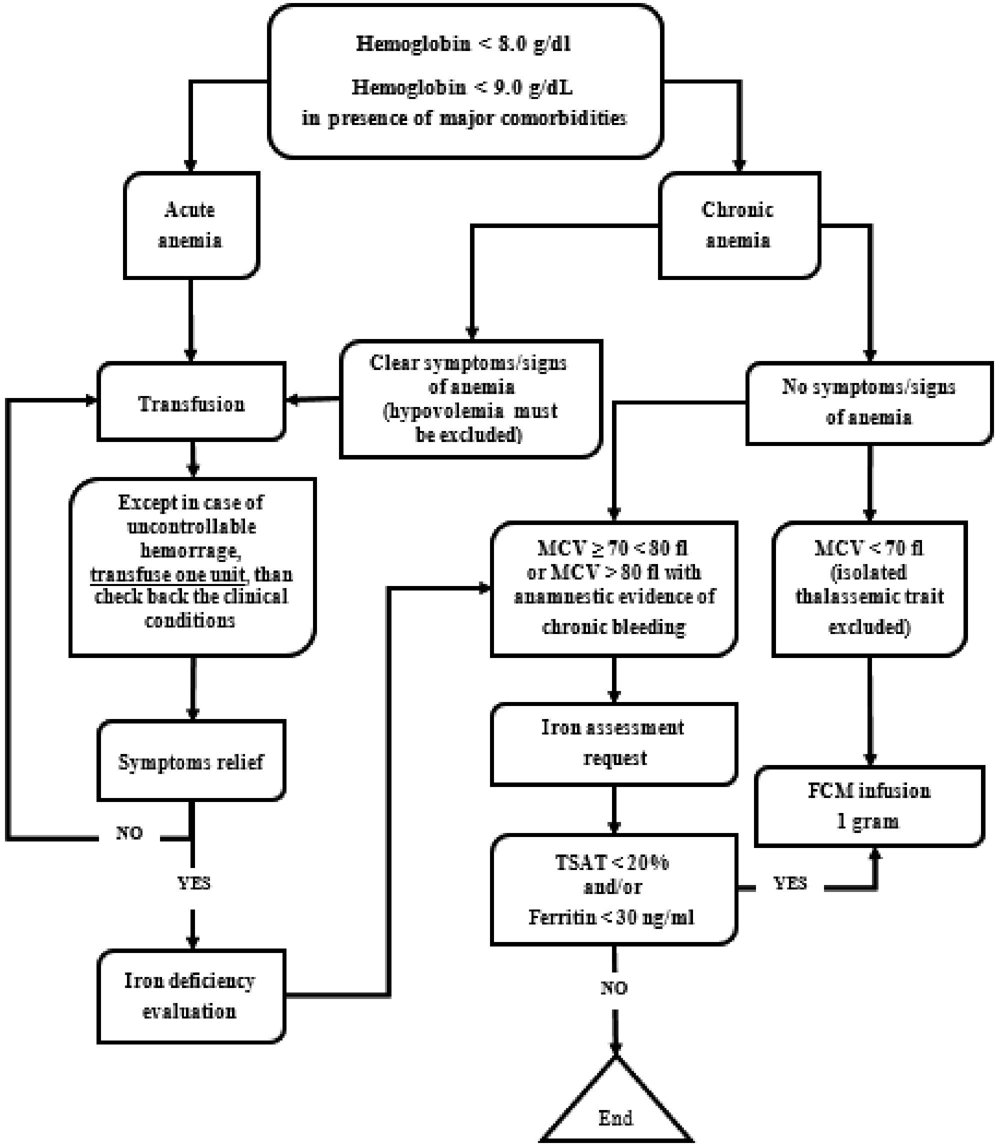
Number of patients transfused	281
Iron balance assessment – n. (%)	22 (22.2)
Transferrin saturation - % (± SD)	9.7 (8.5)
Ferritin (ng/mL) – mean (± SD)	19 (15)
Iron prescription – n. (%)	
No	56 (57.1)
Oral	33 (33.7)
Intravenous	9 (9.2)

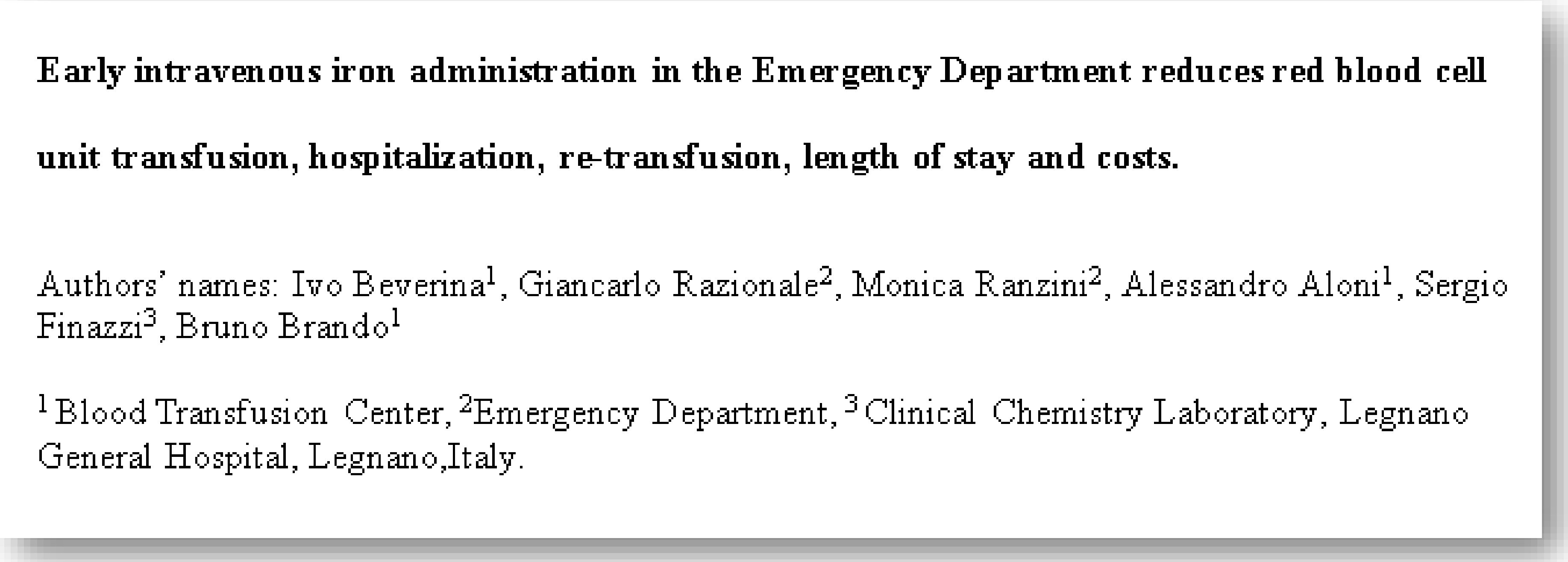
Abbiamo quindi fatto il passo successivo

Azioni intraprese

- Preparazione e condivisione con il Responsabile del Pronto Soccorso di una semplice flowchart decisionale
- Accordo con il Laboratorio Analisi per bilancio marziale in urgenza da PS secondo i criteri della flowchart
- Accordo con la Farmacia per fonitura a PS di scorta del farmaco

Flowchart decisionale


Hemoglobin < 8.0 g/dl
Hemoglobin < 9.0 g/dL in presence of major comorbidities
Acute anemia
Chronic anemia
Transfusion
Clear symptoms/signs of anemia (hypovolemia must be excluded)
No symptoms/signs of anemia
Except in case of uncontrollable hemorrage, transfuse one unit, than check back the clinical conditions
MCV ≥ 70 < 80 fl or MCV > 80 fl with anamnestic evidence of chronic bleeding
MCV < 70 fl (isolated thalassemic trait excluded)
Symptoms relief
NO
YES
Iron assessment request
FCM infusion 1 gram
TSAT < 20% and/or Ferritin < 30 ng/ml
YES
NO
Iron deficiency evaluation
End



Early intravenous iron administration in the Emergency Department reduces red blood cell unit transfusion, hospitalization, re-transfusion, length of stay and costs.

Authors' names: Ivo Beverina[1], Giancarlo Razionale[2], Monica Ranzini[2], Alessandro Aloni[1], Sergio Finazzi[3], Bruno Brando[1]

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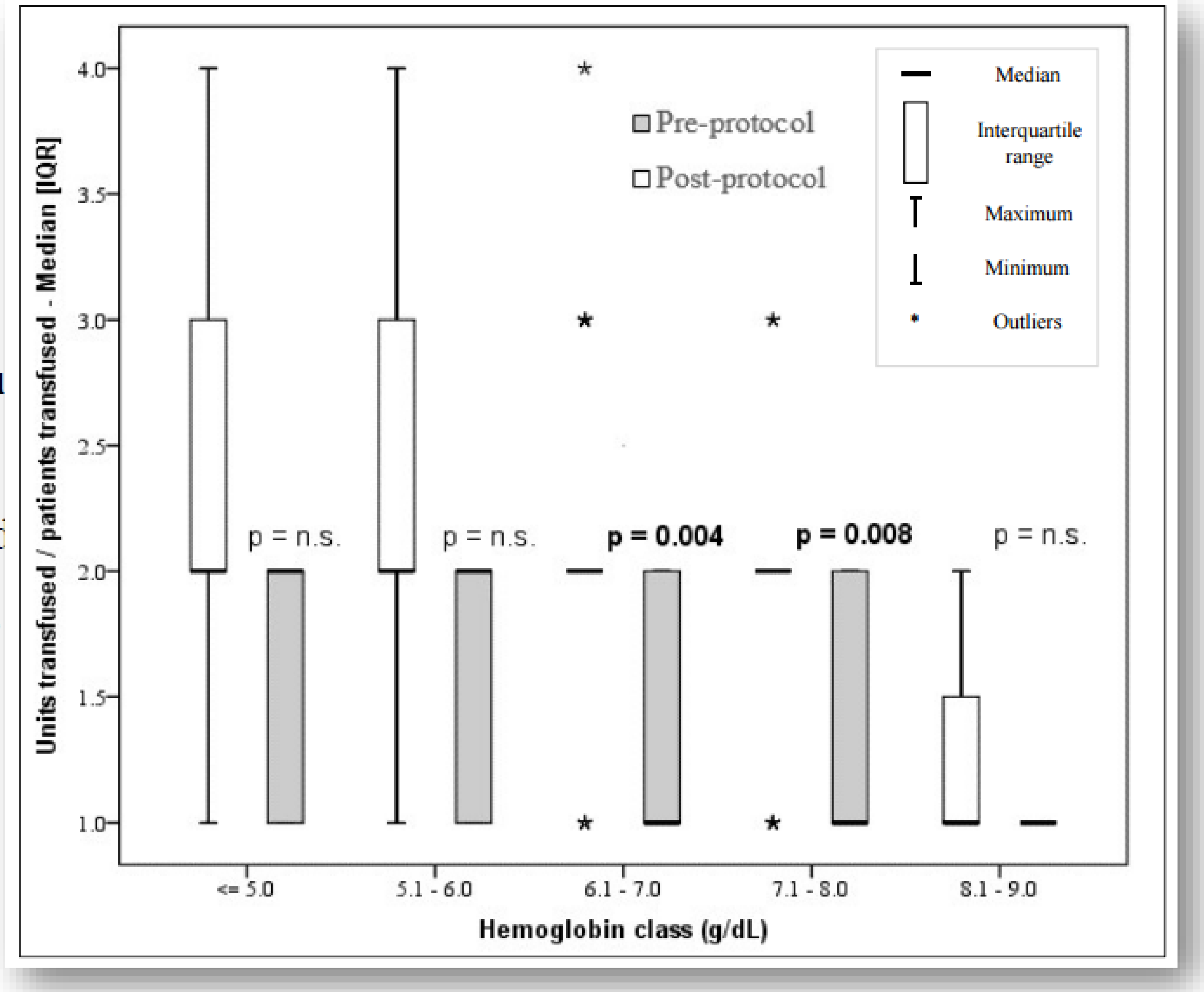
Articolo accettato da Bloodtransfusion in data 15 Novembre 2019 – In press

Casistica

Pazienti con Hb < 9.0 g/dL e MCV < 80 fL

	Pazienti pre-protocollo	Pazienti post-protocollo
	226	276
F/M	2.1	2.1
Età (± DS)	65 (± 24)	65 (± 22)
Hb basale(± DS)	7.5 (± 1.2)	7.5 (± 1.1)

Risultati

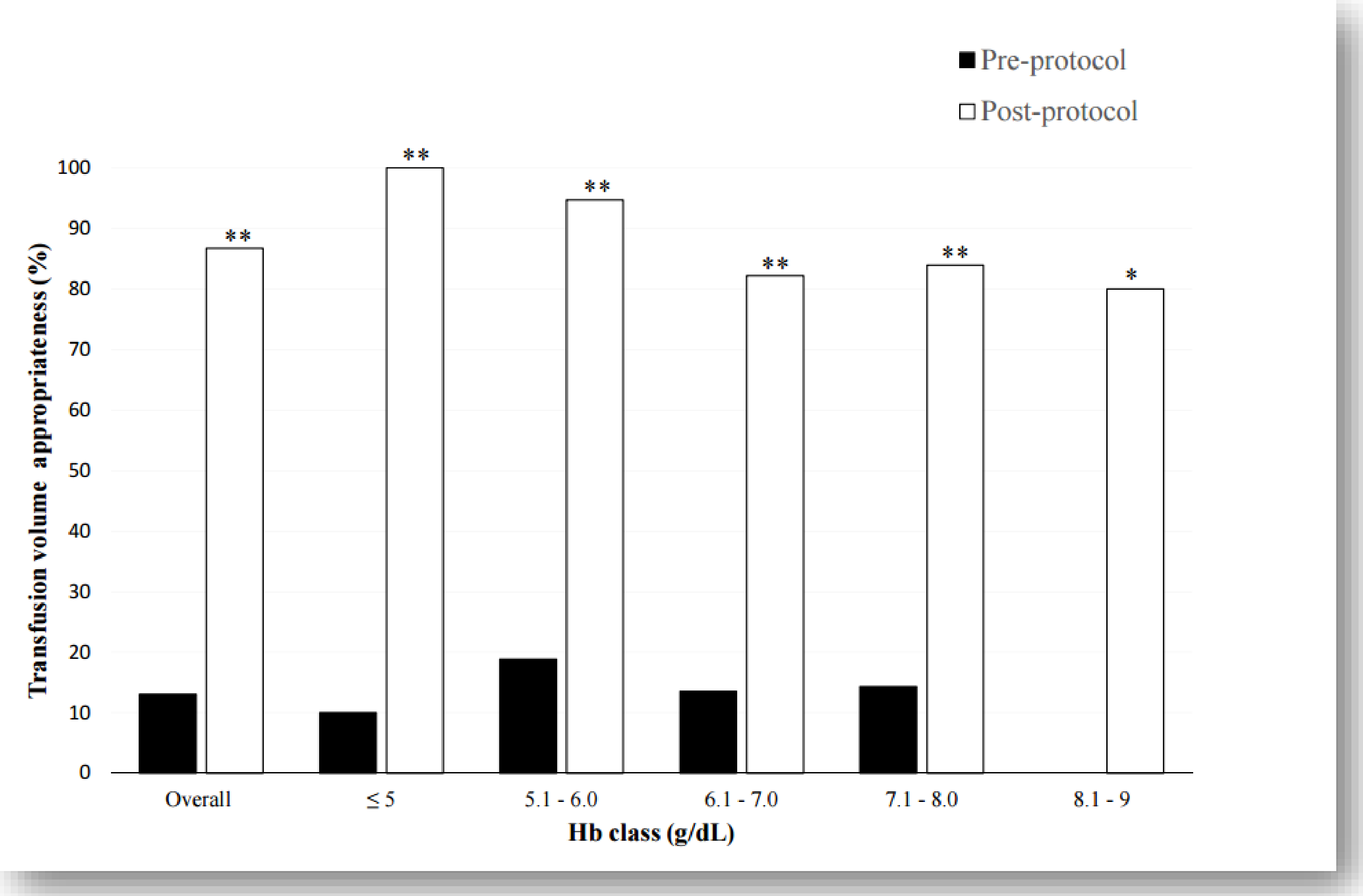


	p
Hemoglobin at transfu	n.s.
Patients transfused, n.	n.s.
RBC units transfused	< 0.001
"One unit" episodes,	< 0.001

Risultati (2)

	Pre-protocol	*Post- protocol*	p
Iron balance assessment, n. (%)	22 (9.7)	101 (37.8)	**< 0.001**
Transferrin saturation, %	9.7 (8.4)	4.5 (2.7)	n.s.
Ferritin (ng/mL)	18 (15)	15 (25)	n.s.
Iron prescription, n. (%)			
No	182 (80.5)	125 (46.8)	**< 0.001**
Oral	34 (15.1)	8 (3.0)	**< 0.001**
Intravenous	10 (4.4)	134 (50.2)	**< 0.001**

Risultati



Therapy, n. (%)	p
No transfusion – No	< 0.001
Transfusion only	< 0.001
Iv iron only	< 0.001
Transfusion and iv i	< 0.001

APPROPRIATEZZA TRASFUSIONALE IN TERMINI DI **VOLUME TRASFUSO**

Risultati (4)

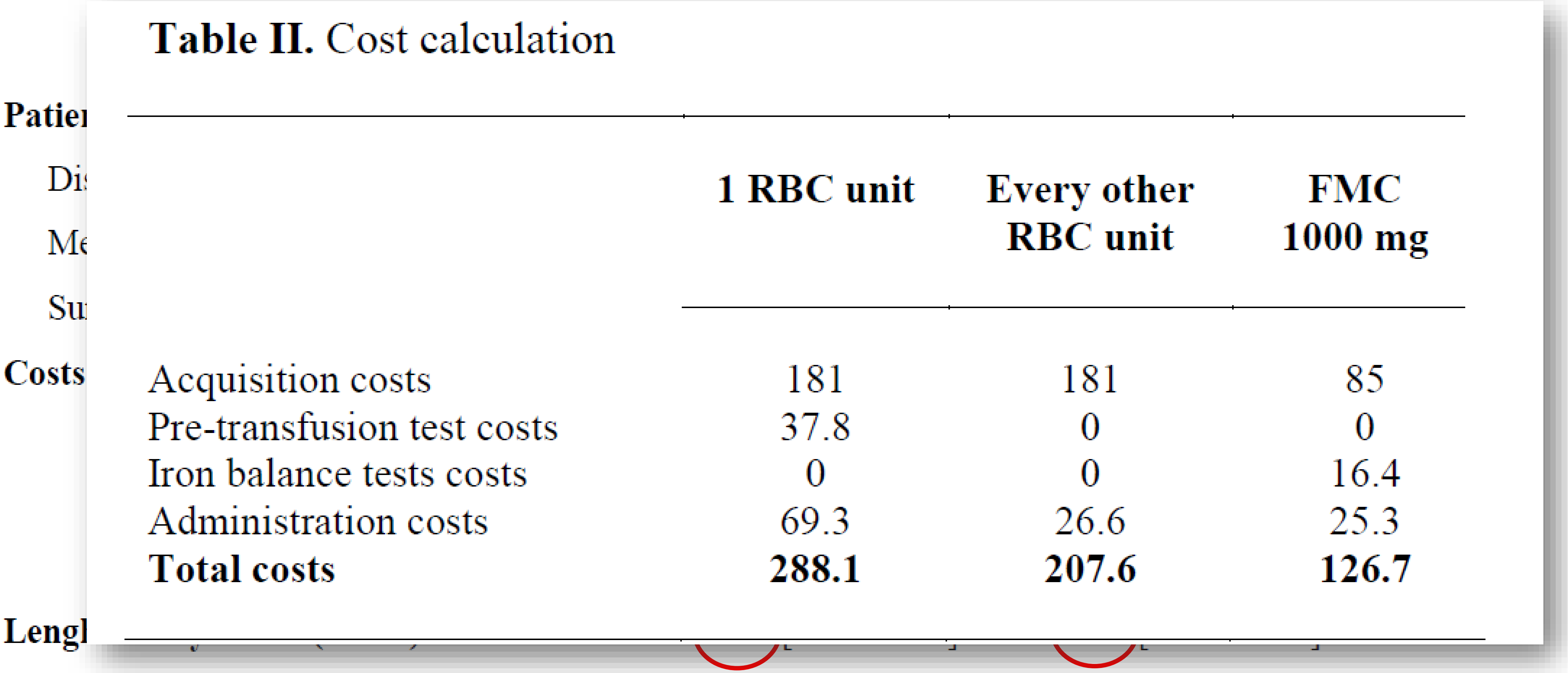
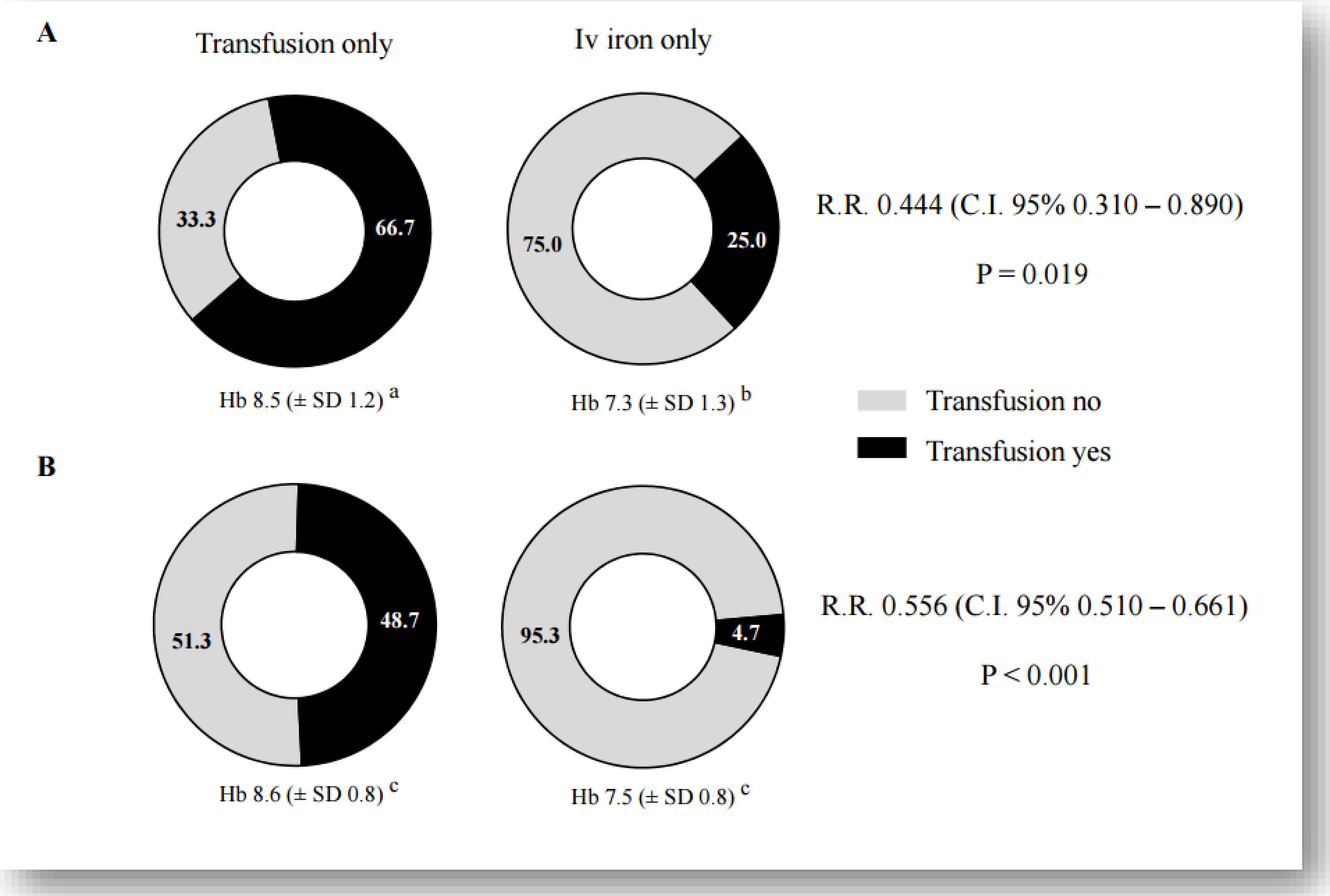


Table II. Cost calculation

	1 RBC unit	Every other RBC unit	FMC 1000 mg
Acquisition costs	181	181	85
Pre-transfusion test costs	37.8	0	0
Iron balance tests costs	0	0	16.4
Administration costs	69.3	26.6	25.3
Total costs	**288.1**	**207.6**	**126.7**

Risultati (5)



EFFICACIA A BREVE E LUNGO TERMINE DELLA TERAPIA MARZIALE ENDOVENA

Conclusioni

Il nostro studio dimostra che l'infusione di Ferro Carbossimaltosio effettuata direttamente in Pronto Soccorso

- E' operativamente fattibile
- E' efficace nel ridurre il numero di trasfusioni, anche a lungo termine
- Riduce il tempo di stazionamento in PS (costi per l'Ospedale e sociali NON calcolati)
- Riduce la percentuale di pazienti ospedalizzati
- E' cost-effective

Grazie per l’attenzione!