IMPACT OF EUROPEAN MEDICINES AGENCY RECOMMENDATIONS FOR ALLERGIC REACTIONS TO INTRAVENOUS IRON-CONTAINING DRUGS IN DIALYSIS CENTERS OF LOMBARDY REGION

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For the Lombardy Section of Italian Society of Nephrology

BACKGROUND & AIMS

EMA has recommended measures to be taken to manage and minimize the risk of hypersensitivity reactions (**HSR**) to all intravenous iron (**FeIV**) drugs available across Europe

Despite the benefits FeIV preparations are greater than their risks, EMA released new recommendations to minimize the risk of HSR

EMA's recommendations were locally diffused by Italian drug Agency: AIFA

AIFA warns that FeIV treatments should be administered "only" in a context where intensive care units ICU are included.

Translation of the term "emergency facilities" to "ICU", has created more uncertainties than clarifying.

AIM: To analyze the effects on FeIV clinical management after the introduction of EMA's recommendations among HDC in Lombardy Region.

METHODS

Items Concerning

A questionnaire and cover letter were sent to all the directors of Lombard HDC inviting to participate in the study

a) Characteristics of HDC
b) Presence of ICU
c) Organizational for emergency
d) Presence of nephrologists or BLSD staff
e) Availability of resuscitation service
f) Instrumental facilities
g) Type of FeIV molecule used

Statistical Methods

1- Outcome variable: Difference in FeIV prescriptions % "Δ-FeIV%"
Δ-FeIV%= %2014 - %2013

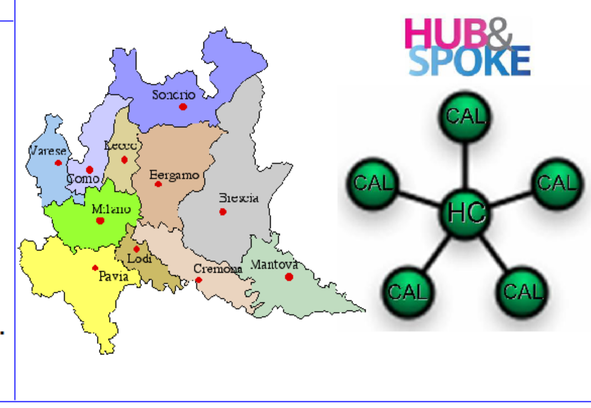
2- Associations analysis between dichotomous variables
Odds Ratio (OR) & Fisher's tests

3- Causal effects of dichotomous indicators on continous variables
Linear regression models (i.e. slope parameter= β)

4- Assess confounding impact by percentage variation (Δβ%) of the effect.
Forward stepwise procedure

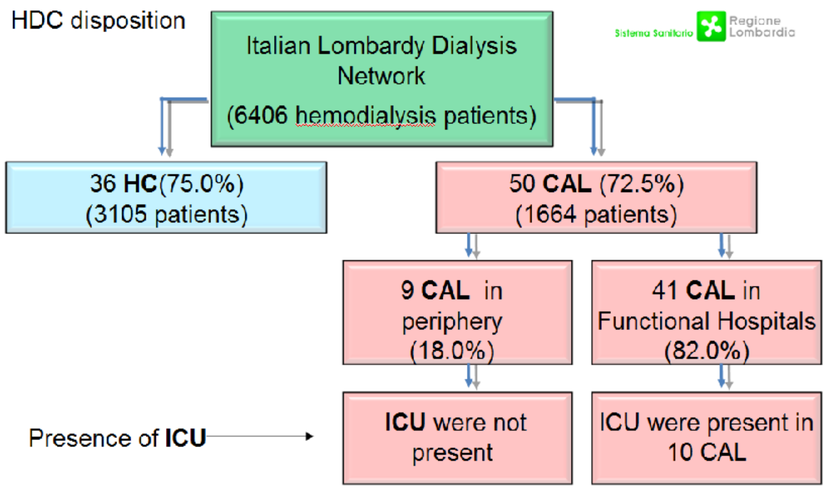
Lombardy Dialysis Network

117 dialysis centers (**HDC**)
48 Hospital Centers (**HC**) (Hub),
69 dialysis limited assistance centers (**CAL**), (Spoke).
that serving **6400** HD patients.



RESULTS

Centers that responded to the survey



Associations with HDC type

Parameters measured n= 86	HC (n= 36)	CAL* (n=50)	OR; (p value); [IC-95%]
BLSD-trained staff	35 (**97.2%**)	30 (**61.2%**)	**22.17;(0.001)**; [2.8-175.5]
Presence of ICU (%)	35 (**97.2%**)	10 (**20.0%**)	**140.0; (0.001)**; [17.1-1149.1]
Emergency devices availability (%)	33 (**91.7%**)	29 (**58.0%**)	**7.97; (0.001)**; [2.15-29.48]
Type of iron used (%)**	14 (38. 9%)	14 (28.0%)	1.64; (0.353); [0.66-4.07]
Modalities of iron infusion (%)	26 (72.2%)	37 (74.0%)	0.91; (1.000); [0.35-2.40]
Moment of iron infusion (%)	10 (27.8%)	11 (22.0%)	1.36; (0.614); [0.51-3.67]

Estimates of HDC type effect of the models adjusted for confounding variables

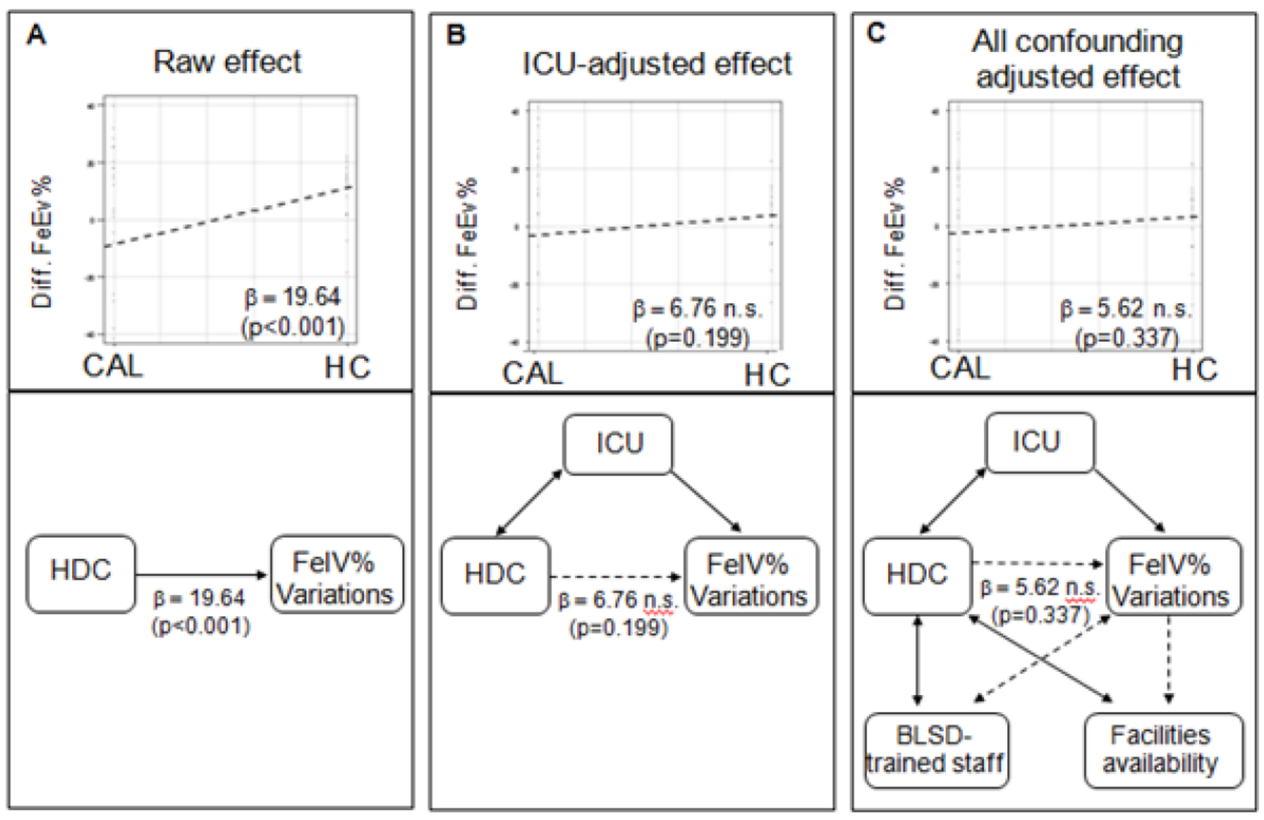
Adding confounding variable	HDC type effect (β) on % FeIV difference OR; (p value); [IC-95%]	Δβ % (from raw "focus" effect)	R^2
BLSD-trained staff	**14.00;(0.008)**; [2.99 - 23.68]	-28.72%	0.201
Presence of ICU	6.76; (0.199); [-2.32 - 18.30]	-65.60%	0.170
Emergency devices availability	**13.26;(0.006)**; [3.39 - 22.57]	-32.50%	0.201
Selected model (with the three confounders)	5.62; (0.337); [-5.5 - 17.08]	-71.38%	0.229

Effects of HDC structural measures on outcome

Parameters measured n= 86	2013 FeIV % (baseline)		FeIV % difference ($\%_{2014}$-$\%_{2013}$)			
	Yes (mean±ds)	NO* (mean±ds)	YES (mean±ds)	NO* (mean±ds)	Difference between Yes & NO β mean; (p-value); [IC-95%]	R^2
BLSD-trained staff	68.8±15.4	68.9±22.5	-6.7±21.2	-32.4±38.4	**25.7**; **(0.008)**; [6.7 - 45.3]	0.146
Presence of ICU	67.9±16.2	70.5±18.7	-1.82±9.9	-23.9±35.6	**22.0**; **(0.001)**; [10.4 - 33.6]	0.163
Emergency devices availability	67.9±17.7	72.5±16.7	-5.2±18.2	-28.5±37.8	**23.3**; **(0.005)**; [6.9 - 40.0]	0.151
Type of iron used **	71.8±16.1	67.9±18.0	-10.2±22.8	-12.8±29.5	2.58; (0.659); [-8.7 - 13.9]	0.002
Modalities of iron infusion	69.5±17.6	68.3±17.1	-9.3±26.9	-18.7±27.9	9.35; (0.171); [-3.5 - 23.3]	0.024
Moment of iron infusion	67.1±19.5	69.8±16.8	-16.1±25.8	-10.5±27.9	-5.60; (0.402); [-20.5 - 5.8]	0.008
Types of HDC structures ***	67.1±16.8	70.7±17.9	-0.79±7.6	-20.4±33.4	**19.6**; **(0.001)**; [9.8 - 30.6]	0.128

* reference (0) category
** Yes= Iron therapy with sucrose or iron carboxymaltose; No= Iron gluconate therapy
*** Yes = Dialysis Hospital centers (HC) ; No = dialysis peripheral center (CAL)
In bold: P<0.05

Ceres plots and confounding path diagrams of HDC type effects on Δ-FeIV%



CONCLUSIONS

1. Following EMA's recommendation an overall drop of **12.6%** in FeIV therapy was observed in Lombard HDC.
2. Differently from HC, CAL decreased FeIV therapy more than **19%**, suggesting a disparity in the anaemia therapy.
3. Reduction in FeIV indications were mainly observed in **CAL without ICU**.
4. This survey identified a sector where it is possible to prevent and improve treatment disparities.

REFERENCES

1. European Medicines Agency - News and Events - New recommendations to manage risk of allergic reactions with intravenous iron-containing medicines. Available from: http://www.ema.europa.eu/ema/index.jsp?curl=pages/news_and_events/news/2013/06/news_detail_001833.jsp&mid=WC0b01ac058004d5c1

2. Agenzia Italiana del Farmaco (AIFA). Nota Informativa Importante su medicinali contenenti ferro (25/10/2013). http://www.agenziafarmaco.gov.it/it/content/ nota – informativa – importante – su – medicinali – contenenti – ferro – 25102013.

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