



**38<sup>ème</sup>** CONGRÈS NATIONAL  
DE CARDIOLOGIE  
ET DE CHIRURGIE  
CARDIO-VASCULAIRE  
Joint au  
**2<sup>ème</sup>** CONGRÈS  
DES SOCIÉTÉS AFRICAINES  
DE CARDIOLOGIE



INSUFFISANCE  
CARDIAQUE

## EPIDEMIOLOGY OF HEART FAILURE IN NIGER

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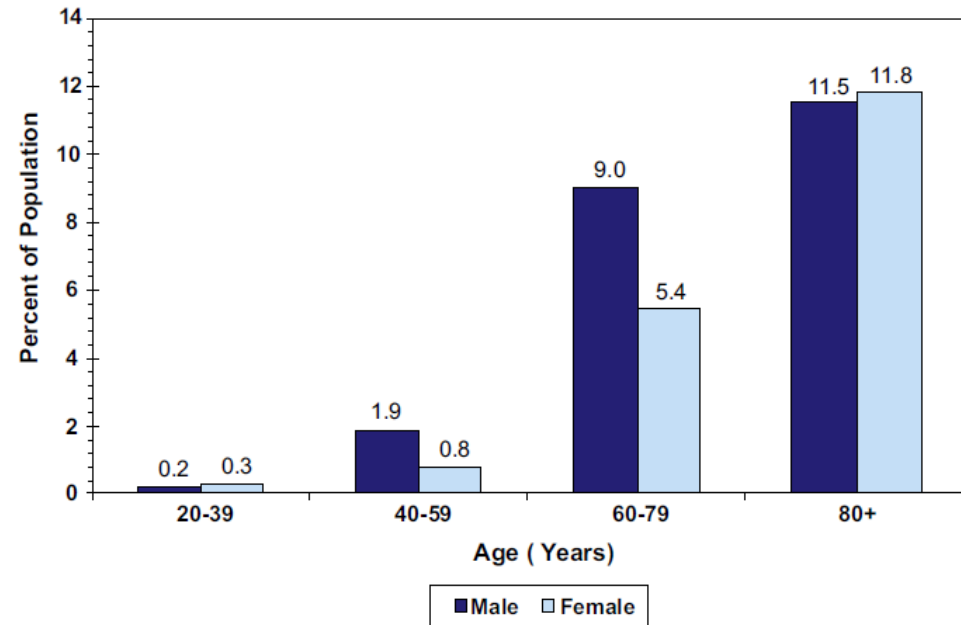
# REAL PUBLIC HEALTH PROBLEM IN THE WORLD

- Prevalence

2-3 % Adult population

23 millions in the world

10-20 % after 70 years old



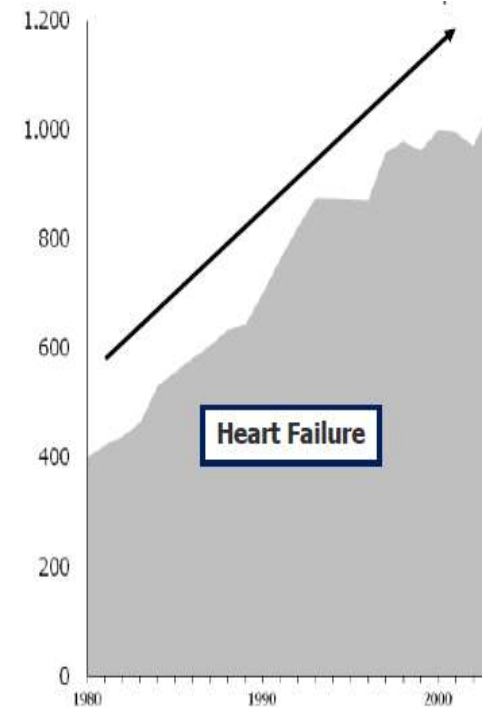
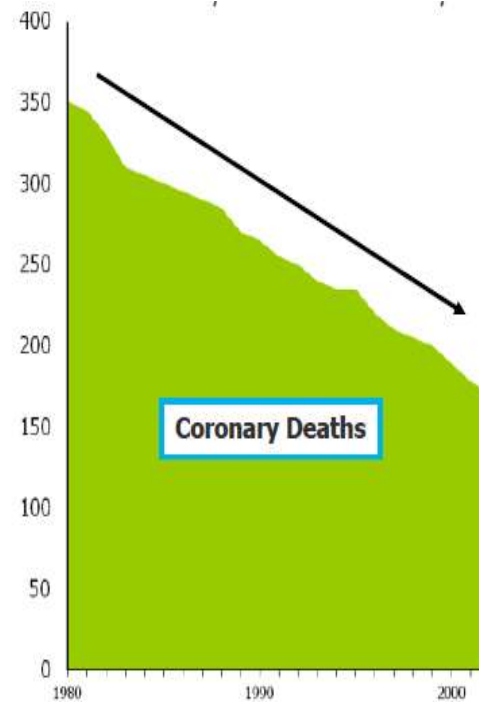
❑ In Africa : Hospital based studies: RCI 40%;

**Sénégal 37.7% ; Togo 28.6% patients < 45 yo**

- **High Morbi-mortality rate: mortality 45-60 % in the following 5 years**

# Real public health pb

- In sub-saharia Africa
- Hospitalisation  
1st cause  
30-47% %
- Few collaborative  
studies



Roger VL, Go AS, Lloyd-Jones DM, et al. Heart disease and stroke statistics 2012 update. *Circulation* 2012;125:e12–30.

Source: National Hospital Discharge Survey/National Center for Health Statistics and National Heart, Lung, and Blood Institute.

# Methodology

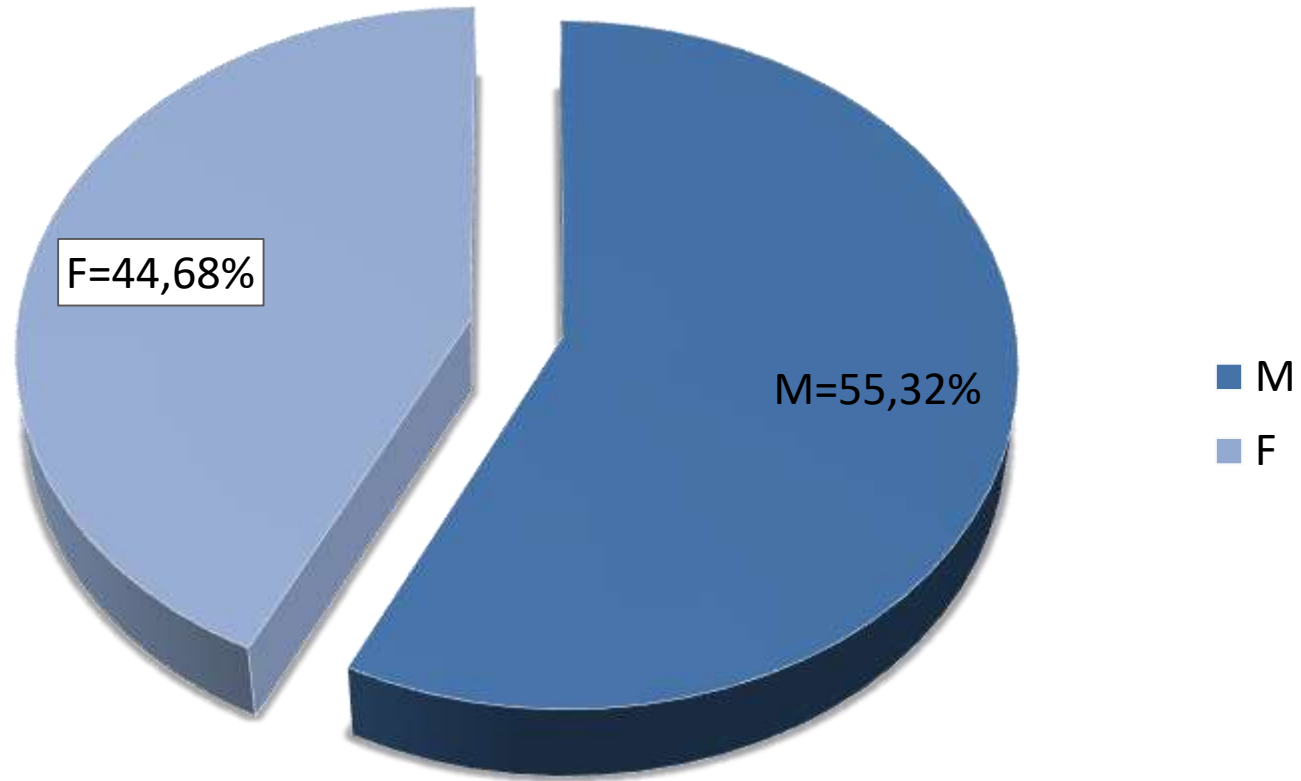
- **Type** : retrospective and prospective study
- **Periode**: 09 years (janvier 2010-September 2018)
- **SITE** : LAMORDE TEACHING HOSPITAL DEPT CARDIOLOGY
- **Inclusion CRITERIAS**: all patients admited for HF diagnosed on clinical and echocardiographical findings

# RESULTS

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From 1st January 2010 to 30 th SEPT 2018( 105 months):**1447 HF patients** on 3021 cardiac patients

Prevalence : **47,88 %** during **105 months**  
**equivalent to 13-14 cases per month**  
**approximatively 1 case each 2days.**



**Fig1 : Répartition des patients selon le sexe**  
**sexe ratio=1,23**

**Table1 : Repartition according to age**

<b>Age</b>	<b>Prevalence</b>	<b>Percentage (%)</b>
<b>13-19</b>	<b>43</b>	<b>2,97</b>
<b>20-29</b>	<b>97</b>	<b>6,70</b>
<b>30-39</b>	<b>168</b>	<b>11,61</b>
<b>40-49</b>	<b>173</b>	<b>11,96</b>
<b>50-59</b>	<b>242</b>	<b>16,73</b>
<b>60- +70</b>	<b>724</b>	<b>50,03</b>
<b>Total</b>	<b>1447</b>	<b>100</b>



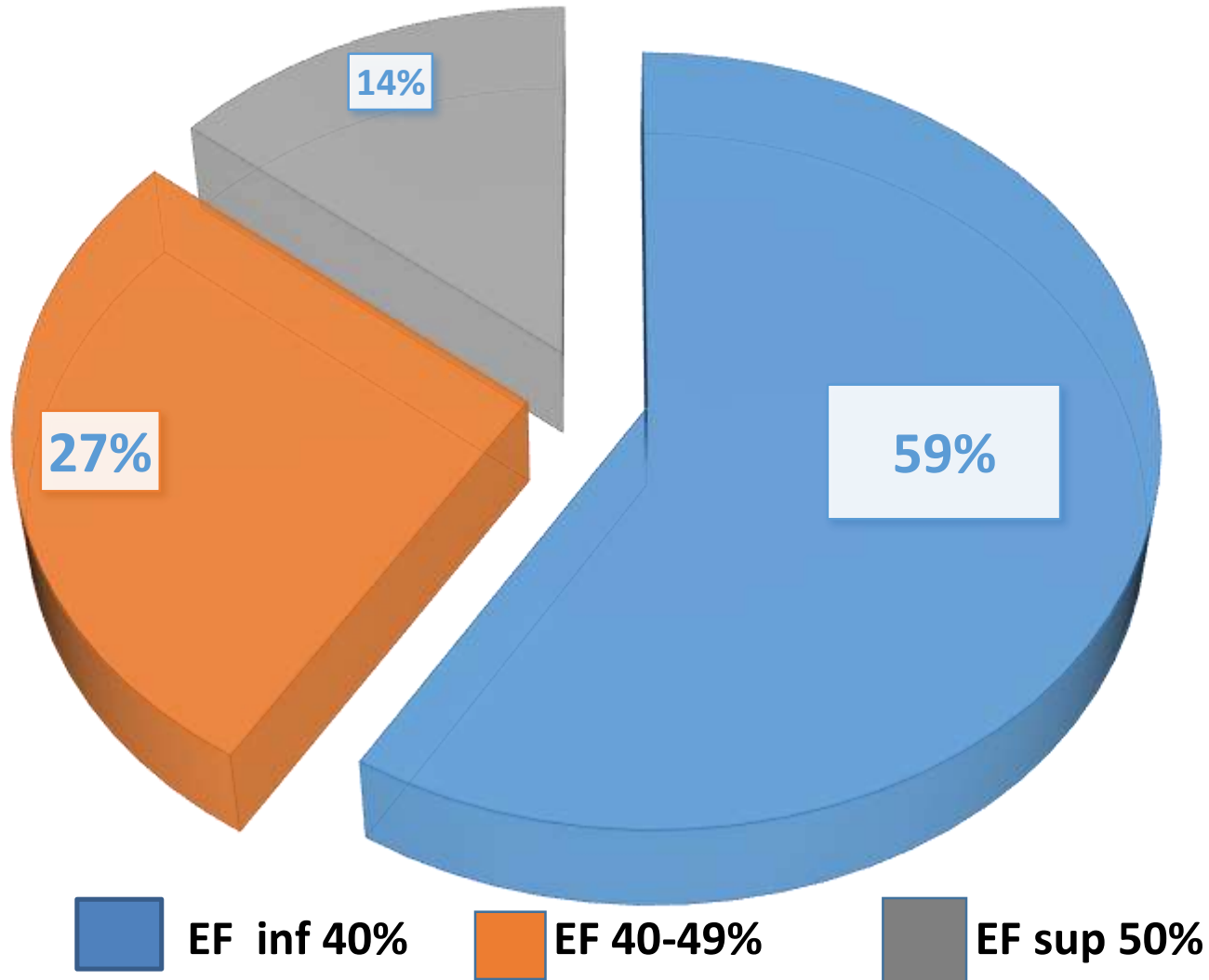
**Table 2 : Repartition of patients according to type of HF**

<b>TYPE</b>	<b>Prevalence</b>	<b>Percentage (%)</b>
<b>Global HF</b>	<b>1153</b>	<b>79,68%</b>
<b>LVF</b>	<b>228</b>	<b>15,76%</b>
<b>RVF</b>	<b>66</b>	<b>4,56%</b>
<b>Total</b>	<b>1447</b>	<b>100</b>

**Table3 : Repartition of patients according to aetiologies**

ETIOLOGIES	Prevalence	Percentage
DCM	387	26,74%
ISCHEMIC HD	67	4,63%
Dysthyroiditis	5	0,34%
PPCM	186	12,85%
HBP	662	45,75%
PERICARDITIS	7	0,48%
VALVULOPATHIES	133	9,19%
Total	1447	100,0%

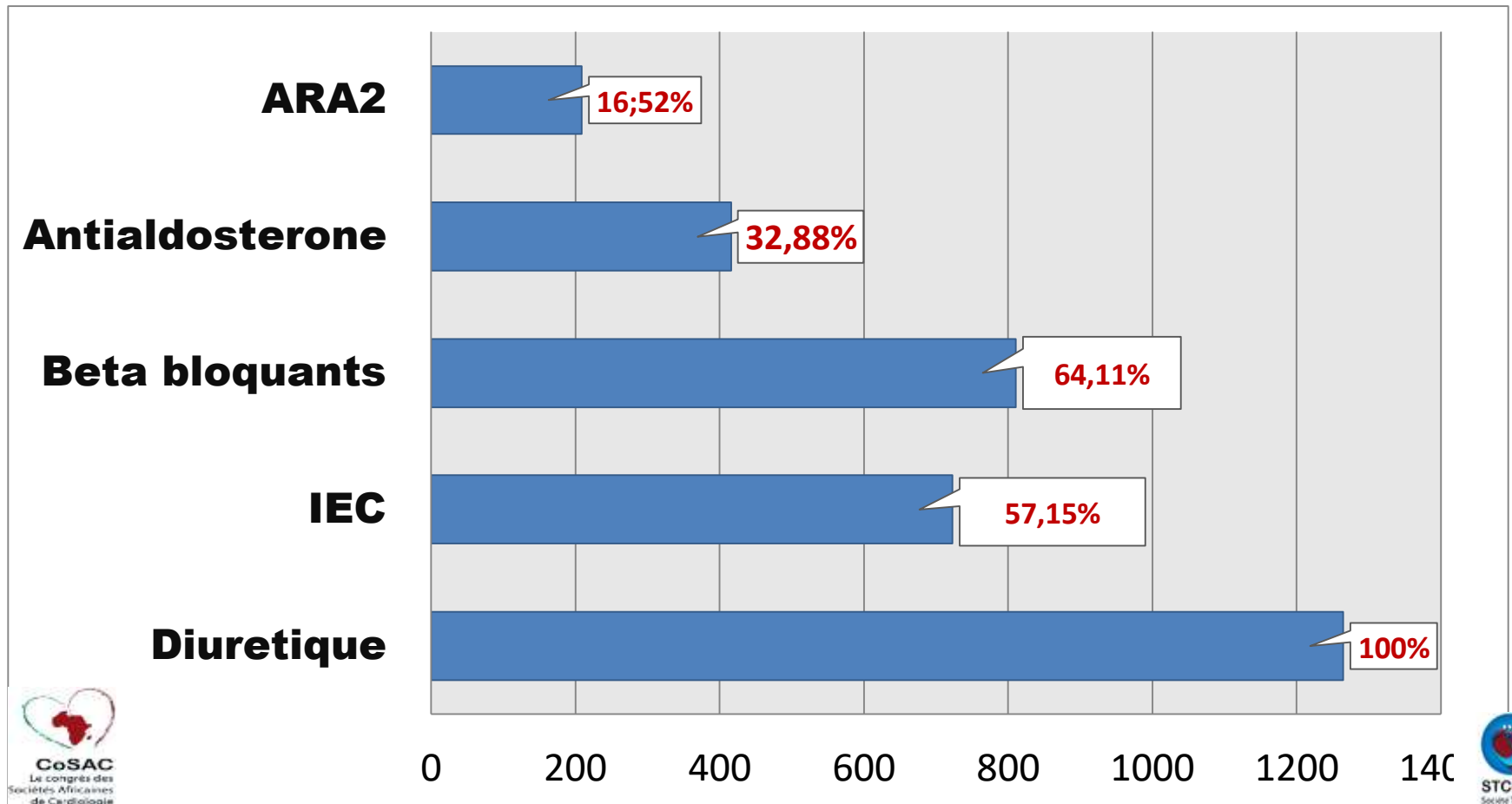
# EFVG



## Table4 : Repartition of associated co-morbidities

Co morbidities	Prevalence	Percentage (%)
<b>Pneumopathies</b>	<b>491</b>	<b>37,11%</b>
<b>Anemia</b>	<b>237</b>	<b>17,65%</b>
<b>Atrial fibrillation</b>	<b>127</b>	<b>08,77%</b>
<b>Diabetes</b>	<b>141</b>	<b>10,67%</b>
<b>Tuberculosis (+HIV)</b>	<b>102</b>	<b>7,74%(3.72%)</b>
<b>Urinary tract infection (+RF)</b>	<b>167</b>	<b>11,52% (7.60%)</b>
<b>MALARIA</b>	<b>221</b>	<b>15,29%</b>
<b>Total</b>	<b>1447</b>	<b>100%</b>

# Therapeutics



## RESULTS : Quality by Countries

- According to the sampling protocol, the quality of 1530 samples was assessed

*(ten samples randomly chosen by drug, by place of sale and country)*



16.3 % samples « poor quality »  
(N=249/1530)

- Prevalence of poor quality varied between countries, but this difference doesn't reach statistical significance ( $P=0.077$ ).

Legend : % poor quality drugs (low (B) and very low (C) quality samples)

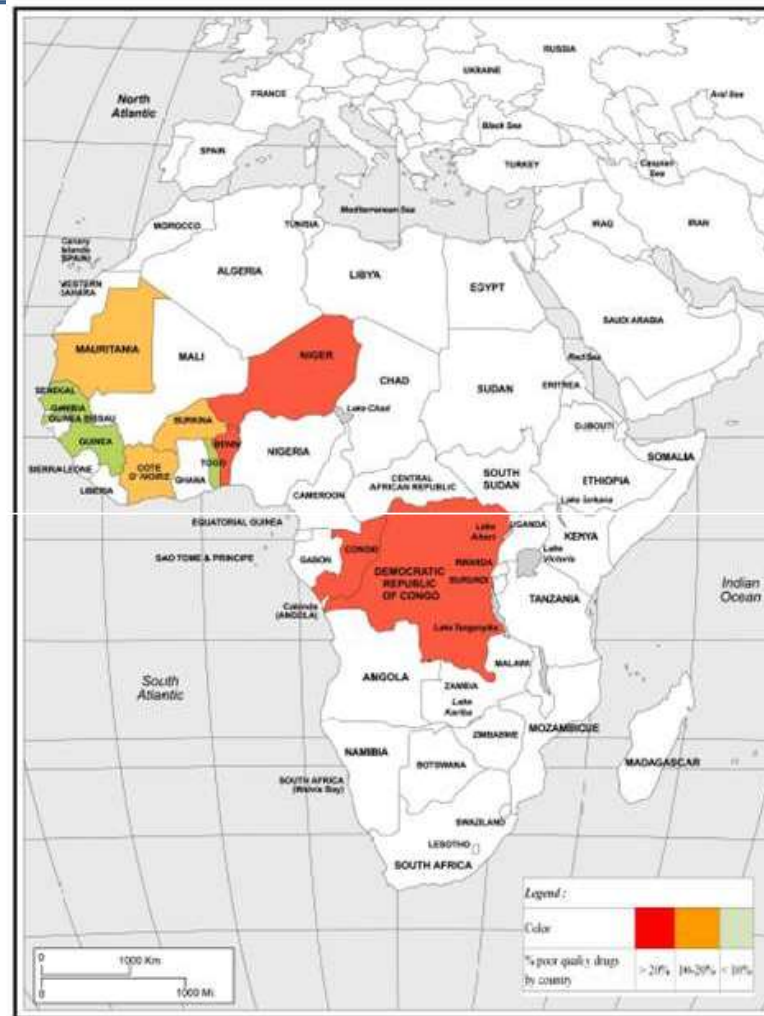
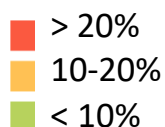


Figure : Proportion of poor quality drugs observed in 1530 samples

## FACTEURS ASSOCIATED with « POOR QUALITY »

### Univariate analysis

The prevalence of poor quality was significantly increased

CHARACTERISTICS	N	% OF POOR QUALITY DRUGS [95 % CI]	P-VALUE*
<i>Drug</i>		<b>in certain specific drugs</b>	<b>&lt;0.001</b>
Acenocoumarol	165	0.0% [0%-2.2%]	
Hydrochlorothiazide	160	1.9% [0.0%-5.4%]	
Furosemide	240	12.5% [8.6%-17.4%]	
Atenolol	245	15.1% [10.9%-20.2%]	
Simvastatin	180	17.8% [12.5%-24.1%]	
Captopril	235	25.5% [20.1%-31.6%]	
Amlodipine	305	28.5% [23.5%-33.9%]	

<i>Version of drug</i>		<b>in generic versions (23%)</b>	<b>&lt;0.001</b>
Brand-name drug	475	2.3% [1.2%-4.1%]	
Unknown	55	9.1% [3.0%-20.0%]	
Generic drug	1000	23.3% [20.7%-26.0%]	

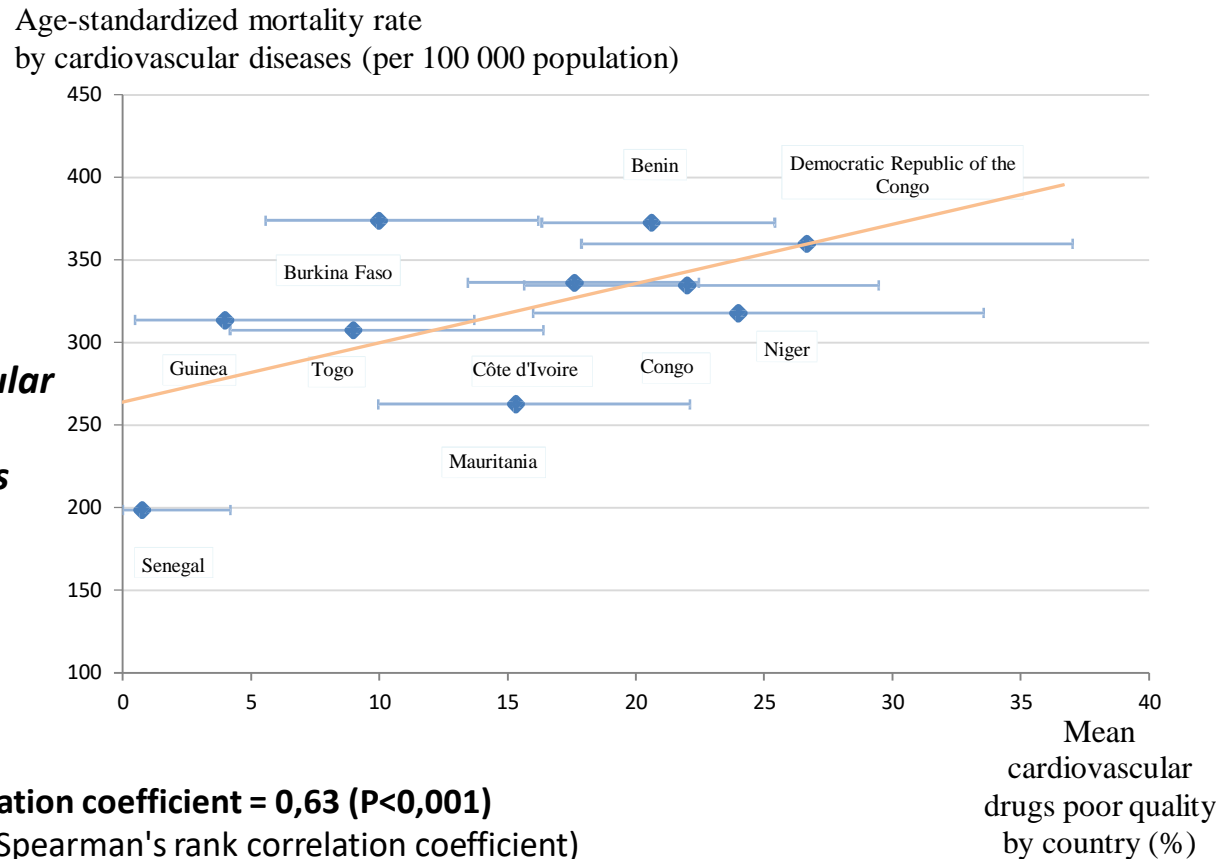
<i>Indicated place of drug's manufacture</i>		<b>in drugs produced in Asia (35%).</b>	<b>&lt;0.001</b>
Europe	970	8.7% [7.0%-10.6%]	
Africa	170	19.4% [13.7%-26.2%]	
Unknown	155	31.6% [24.4%-39.6%]	
Asia	235	35.3% [29.2%-41.7%]	



Multivariate  
analysis

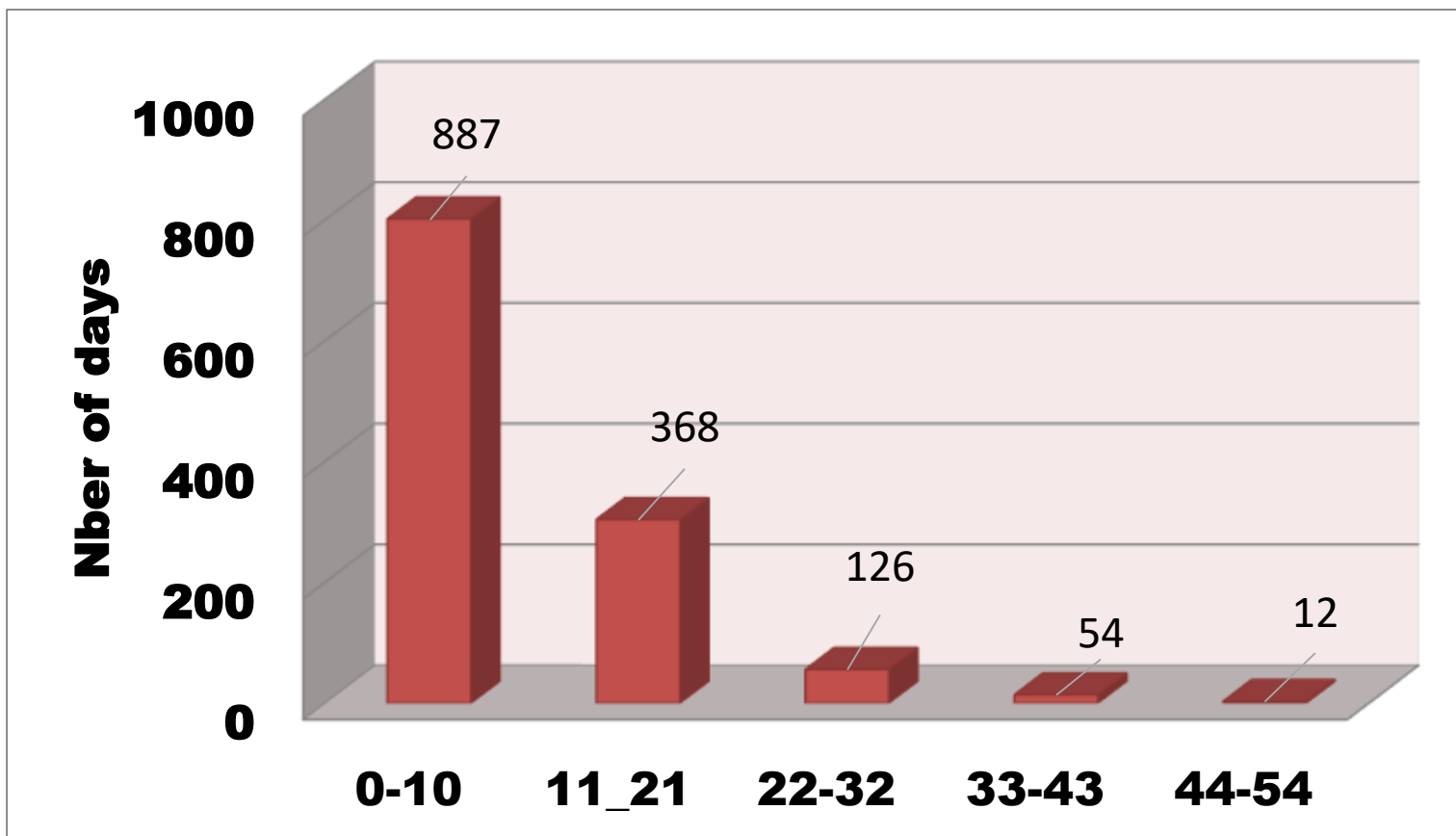
## Poor quality by countries CVD mortality rates

**Figure :**  
**Poor quality**  
**drugs**  
**by cardiovascular**  
**diseases**  
**mortality rates**

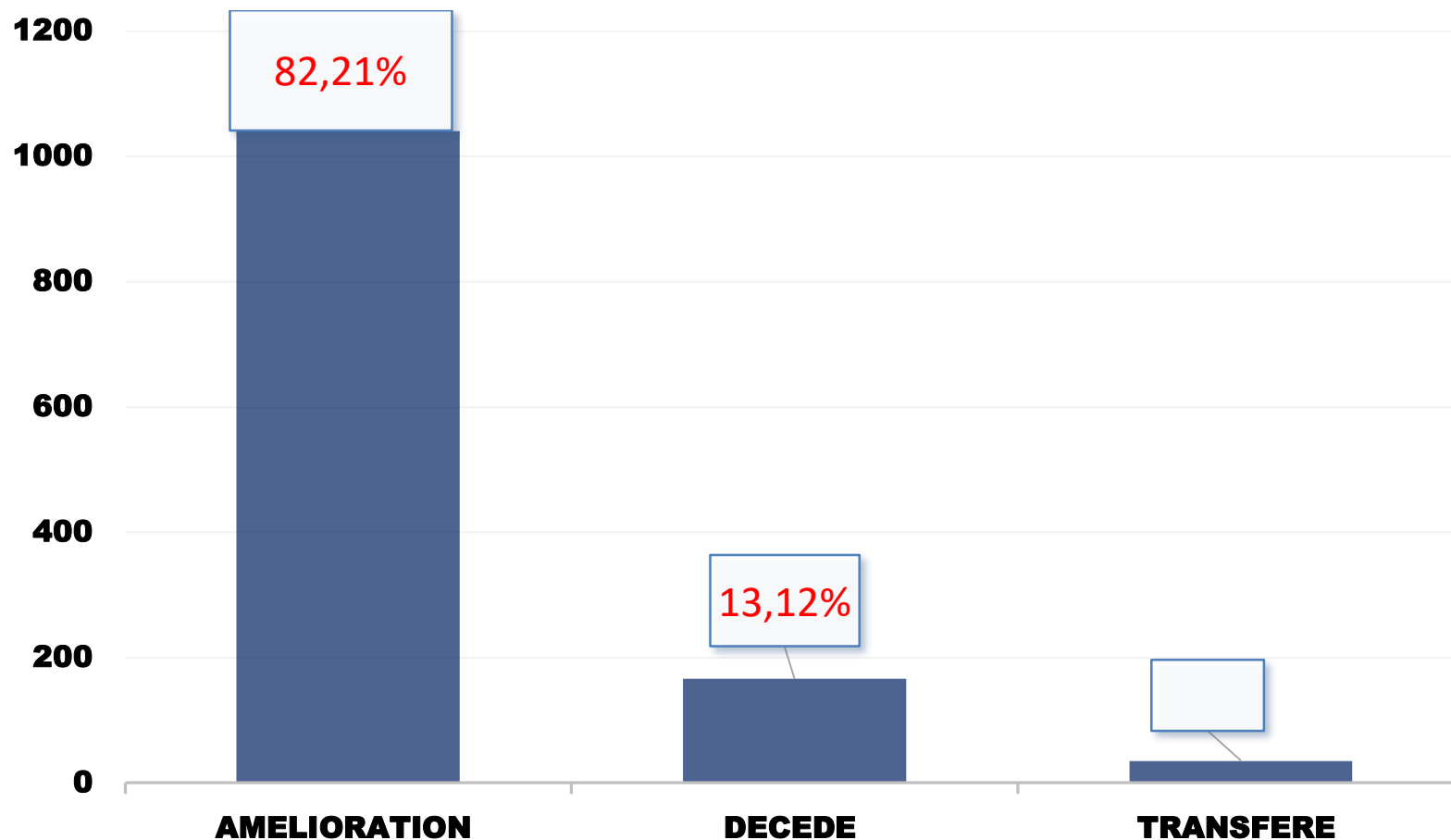


Legend: blue ticks represent confidence interval of percentage of mean poor quality drugs by country; orange line represents linear regression from Age-standardized cardiovascular diseases mortality rate by cardiovascular diseases (per 100 000 population) by percentage of cardiovascular drugs poor quality by country.





**Fig3 : Repartition of patients according to duration of hospitalisation**

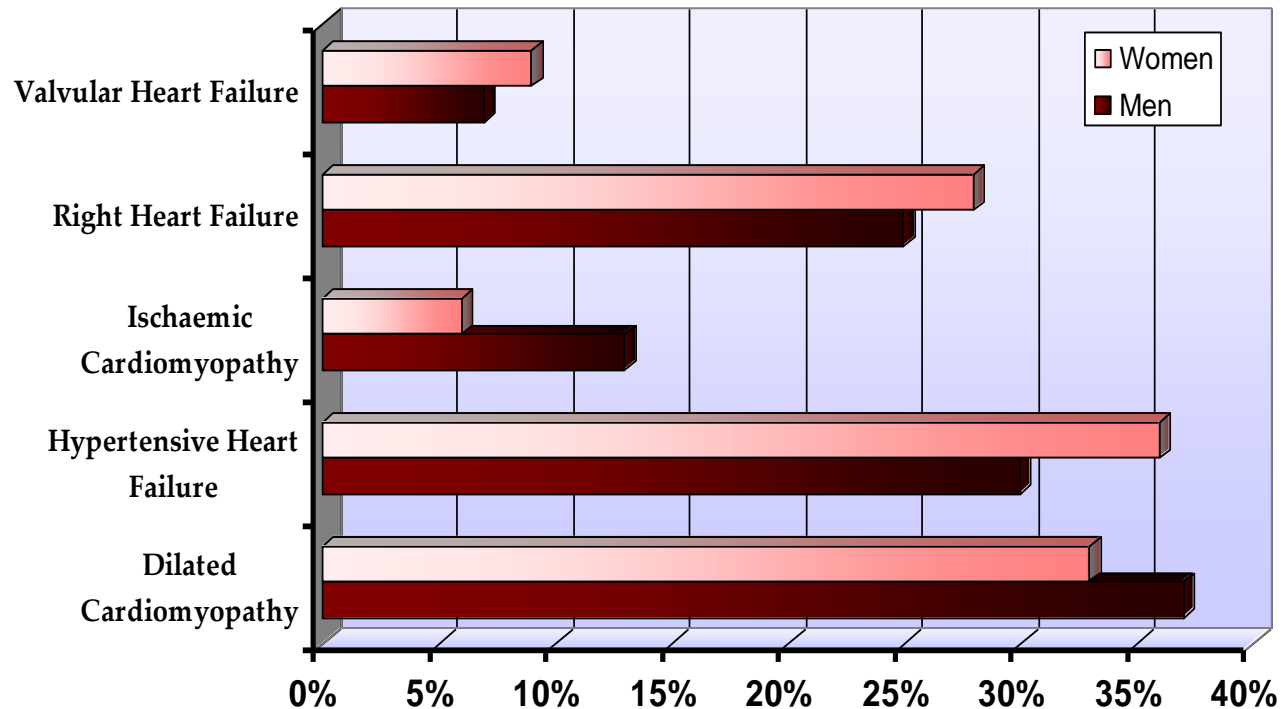


**Figure5 : Repartition of patients according to evolution**

# Complex Burden of HF in Africa urban setting:

A predominance of young women and large component of right heart failure

*Stewart S, Wilkinson D, Mvungi R, McMurray J, Sliwa K; Circulation 2008*



# THE THESUS 1006 patients prospective cohort study on heart failure

Hypertension = 396 (40.4%)

Rheumatic Heart Disease = 140 (15.4%)

Idiopathic dilated Cardiomyopathy = 136 (13.9%)

Ischemic Heart Disease = 77 (7.9%)

Peripartum Cardiomyopathy = 75 (7.6%)

Pericardial Effusion/Tamponade = 47 (4.8%)

Other: Endemic = 39 (4.0%)

Other: Emerging = 34 (3.5%)

HIV Cardiomyopathy = 23 (2.4%)

Endomyocardial Fibrosis = 13 (1.3%)

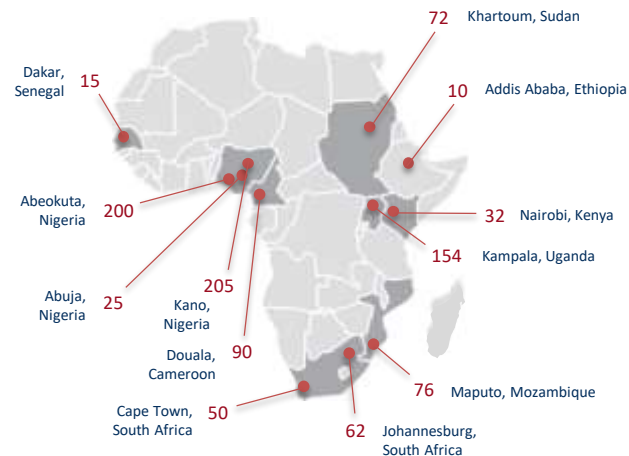
**Mean age:** 52.3 ± 18.3 years,

**Gender:** 50.8% were women

**Ethnicity:** Black Africans (98.5%)

**LV function:** Mean LVEF 39.5% ± 16%

**Mortality:** 17.9 % in 6 months



**Damasceno A et al. The Thesus study. Archives of Internal Medicine 2012.**

# Features of Patients with Acute Decompensated Heart Failure in Registries in the ADHERE (United States), EHFS II (Europe) and THESUS-HF (sub-Saharan Africa) Registries

*Sliwa K & Stewart S. Heart Failure in the Developing World; D. Mann  
- HF companion to Braunwald's Cardiology Textbook, 2015*

	ADHERE REGISTRY (n = 105,388)	ADHERE—AP (n = 10,171)	EHFS II REGISTRY (n = 3580)	THESUS-HF REGISTRY (n = 1006)
Male, %	48	57	61	49
Mean age, years	72	66	70	52
Hypertension	73	64	63	45
Coronary artery disease, %	57	50	54	7
Diabetes, %	44	45	33	11
Atrial fibrillation, %	31	24	39	18
Anemia, %	NA	NA	15	8
Renal insufficiency, %	30	NA	17	8

# CONCLUSION

HF is really a major public health problem, and cost a lot in most of SSA COUNTRIES AND ELSEWHERE IN THE WORLD.

- Prevalence HF : dramatically increasing
- Etiologies: dominated by **HBP:45,75% and DCM**
- Comorbidities : **infections** (pneumony tract ,urinary tract, malaria and tuberculosis).+++
  - **aenemia:++**
  - **diabetes :++**
- Prevention: HBP and other CVRF ,and common infections including malaria and tuberculosis.

**Thank You .**

**شكرا .**

