A timeline of a collaborative project in Latin America: The Molecular Profile of Breast Cancer Study (MPBCS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>MPBCS starts</td>
</tr>
<tr>
<td>2011</td>
<td>MPBCS recruitment ends</td>
</tr>
<tr>
<td>2013</td>
<td>MPBCS 5-yr follow-up ends</td>
</tr>
<tr>
<td>2018</td>
<td>MPBCS data curation</td>
</tr>
<tr>
<td>2019</td>
<td>MPBCS first two papers published</td>
</tr>
<tr>
<td>2022</td>
<td>New substudy: Pattern of care of mBC</td>
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<tr>
<td>2024</td>
<td>MPBCS papers 1 published 1 in revision 1 in writing</td>
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2020 Argentina Normativa para Biobancos de Investigación Resolución 2940 / 2020 Ministerio de Salud

2021 Creación de la UNIDAD OPERATIVA CENTRO NACIONAL DE GENÓMICA Y BIOINFORMÁTICA Disposición N° 707/2021 ANLIS
LACRN challenges

Real-world issues – heterogeneity in access to care, delays/shortage of medication, quality of pathology supplies, etc.

A huge effort in harmonization (1 year, several meetings) – clinical practices (e.g. tumor marking), biobanks and gene-expression microarrays

Difficult to implement training, lack of GCP compliance

Lack of experience in biobanking, genomic analysis
LACRN challenges

QC/QA actions were a burden to already exhausted health systems
- SOPs
- Data monitoring
- QC/QA forms (e.g. ischemia times, genomics analysis)

New procedures: biobanking, FISH/CISH, snap freezing, residual cancer burden

Infrastructure and sustainability possibilities were different for each center

Logistics, logistics, logistics
The Molecular Profile of Breast Cancer Study (MPBCS) – some results

Gene expression-based molecular signatures were better discriminators of survival than traditional biomarkers (ER/PR/HER2; NPI)

Non-genetic disparities - access to standard-of-care procedures was constrained in a real-life setting (according to ASCO-QOPI quality standards) – e.g 68% of HER2+ patients received trastuzumab


Strength in numbers:
The Latin America Genomics of Breast Cancer Consortium (LAGENO)

* A multinational effort to address the underrepresentation of Latin American diversity in breast cancer genetics

<table>
<thead>
<tr>
<th>Country</th>
<th>Cases</th>
<th>Controls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>238</td>
<td>1158</td>
<td>1396</td>
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<tr>
<td>Brazil</td>
<td>4735</td>
<td>2400</td>
<td>7135</td>
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<tr>
<td>Chile</td>
<td>720</td>
<td>0</td>
<td>720</td>
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<tr>
<td>Colombia</td>
<td>3172</td>
<td>2053</td>
<td>5225</td>
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<tr>
<td>Guatemala</td>
<td>909</td>
<td>955</td>
<td>1864</td>
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<td>2349</td>
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<tr>
<td>Nicaragua</td>
<td>504</td>
<td>0</td>
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<tr>
<td>Peru</td>
<td>3333</td>
<td>6278</td>
<td>9611</td>
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<td>Puerto Rico</td>
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<td>780</td>
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<td>Uruguay</td>
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<td>USA</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>28195</strong></td>
<td><strong>32424</strong></td>
<td><strong>60619</strong></td>
</tr>
</tbody>
</table>

**Broad Aims**

- Discover of new breast cancer risk associated variants
- Understand mechanisms underlying associations
- Improve polygenic risk scores (PRS) in Hispanics/Latinas

https://www.lageno-bc.org  Ifejerman@ucdavis.edu

The CONFLUENCE study
300K cases/300K controls
https://confluence.cancer.gov/
Key take-home messages for collaborative oncogenomics networks

For the genomic analyses
- Quality of genomics data: facilities vs local developments, quality control studies, external references
- FUNDING – genomics are expensive in Latam; the lack of human resources is also financially limiting

For the clinical data
- Oncogenomics data is nonsense without medical data – an extensive medical data collection is needed
- Huge support for “CRO” tasks in needed: realistic design, data entry/interpretation human resources, health record mining (AI?)
Key take-home messages for collaborative medical oncogenomics networks

For the interdisciplinary team

• Nurture the relationship between doctors and scientists – both are necessary!
• Protected time for clinical research is needed among doctors
• Genomics education/training is FUNDAMENTAL among medical professionals - Clinical education is ESSENTIAL for genomic scientists – e.g. MOLECULAR TUMOR BOARDS

For other essential players

• Institutional review boards – education on genomics-based medicine – PROTECTION VS. EXCLUSION
• Role of patient advocacy groups – engagement helps motivation, funding seeking
• Role of government engagement – stability of technical key players, education, communication
Key take-home messages for collaborative medical oncogenomics networks

For the collaborative networks

• Team building is key – rely on scientists for systematic tasks and data collection/curation
• Strong network governance and data sharing policies/committees - Team efforts are fundamental but not always easy to be recognized
• Communication – many findings are not seen by key players – multiple isolated efforts are lost
• Openness to engage other players
• COMMITMENT, no matter what – everything is difficult, motivation must be driven by the need to know, not by egos
Thank you
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